

**Copyright**  
**By**  
**Matthew William Pappas**  
**2007**

**The Dissertation Committee for Matthew William Pappas certifies that this is the  
approved version of the following dissertation:**

**IS THERE A BELIEF IN GOD AND IMMORTALITY AMONG EMINENT  
PSYCHOLOGY SCHOLARS?**

**Committee:**

---

**Martha Ovando, Supervisor**

---

**Norvell Northcutt, Co-Supervisor**

---

**Caryn Carlson**

---

**Stephen S. Janes**

---

**William Lasher**

**Is there a belief in God and immortality among eminent psychology scholars?**  
**by**

**Matthew William Pappas, B.A., M.Ed.**

**Dissertation**

Presented to the Faculty of the Graduate School of  
The University of Texas at Austin  
in Partial Fulfillment  
of the Requirements  
for the Degree of

**Doctor of Philosophy**

**The University of Texas at Austin**  
**August 2007**

*Computers are useless. They can only give you answers.*

—Pablo Picasso

*Doutez de tout et surtout de ce que je vais vous dire.*

—Bouddha

*I get a lot of questionnaires and I throw most of them in the trashcan. I answered yours because it seemed interesting.*

—Survey Respondent “30BD”



## Acknowledgements

My committee members—Caryn Carlson, Shannon Janes, William Lasher, Norvell Northcutt, and Martha Ovando—have been models of wisdom and fairness, as was my previous advisor, the late William Moore. Perhaps only time will tell the heights of the esteem in which these good people are held by me.

Several others bear mentioning:

The late Lee Willerman let me play in his intellectual sandbox.

The late Ron Brown pushed me gently and firmly.

Ira Iscoe told me no goddamn lies.

Jamie Pennebaker gave me his time and advice.

Mike Telch let me fiddle around in his lab for a year.

Ben Harris went the extra mile, more than once.

Dave Collins was a critical force in the development of this dissertation's questionnaire.

Douglas Weinbrenner gave exquisitely candid advice on complicated logistical matters.

The late Joe Callens was never tardy and always exceptionally sensitive.

Hortensia Palomares, Sarah Cale, Linda Overton, and Reid Watson were gems.

Ron Houston gave me a safe haven.

Jerry Shepperd hired me and listened to me.

Dan Setterberg, Bob Barrie, and Harry Orem let me know what it meant to be good.

Jane Ellington gracefully introduced me to social psychology.

Mary Norman trusted me.

The former Mary Hopkins hired me and published my stuff unedited.

Each of them is in good standing, regardless of whether or not they will ever again stand. In my book, they are perennially making satisfactory progress.

I also offer thanks to those who will take the time to send me errata, comments, questions, and anecdotes tangentially related to this project.

The late Maury Maverick, Jr., whose acquaintance I never made, said, "I'm dying, and I don't know what to do about it."

How about that?

# **Is there a belief in God and immortality among eminent psychology scholars?**

Publication No. \_\_\_\_\_

Matthew William Pappas, Ph.D.

The University of Texas at Austin, 2007

Supervisors: Martha Ovando and Norvell Northcutt

In 1914, James Leuba surveyed the eminent psychologists of the United States with regard to their belief in God and immortality (Leuba, 1916). In 1933, he replicated the survey (Leuba, 1934). His results affirmed, he stated, "that, in general, the greater the ability of the psychologist *as a psychologist* [sic], the more difficult it become [sic] for him to believe in the continuation of individual life after bodily death" (1921a, p. 279). He concluded that eminent behavioral scientists were least likely of all scientists to believe, and that psychological learning made belief in an "interventionist God... almost impossible" (1934, p. 294). He further stated, "If knowledge is, as it seems, a cause of the decline of the traditional beliefs, that decline will presumably continue as long as the increase in knowledge" (1934, p. 300). In 1958, Mayer (1959) replicated Leuba's survey.

The results of the initial survey and the two replications of the survey were consistent with Leuba's hypotheses. However, no one had replicated that survey of eminent psychology scholars in almost fifty years (from 1958-2006)—until now.

The current study replicated Leuba's original survey, as well as collecting additional qualitative data via questionnaires and interviews. The response rate was over 61%. Not one of the respondents expressed a belief in immortality, and only one person expressed a belief in God—and then only with this caveat: “when desperate.” As a matter of fact, of all the groups that have been surveyed using this questionnaire during the last 93 years, this is the first time that 0% of the respondents in a group expressed a belief in immortality.

Only very few of the respondents indicated they engaged in activities that could be deemed in some way religious, spiritual, or contemplative.

Suggested further research would question whether or not substantial nonverbal differences exist between religious people and scientists. Also, although psychology rests on the presumption that the individual human being exists, this study's respondents found defining the individual to be a complex or impossible task.

## TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION	1
Introduction	1
Statement of the Problem	1
Purpose of the Study	2
Research Questions	2
Definition of Terms	3
Assumptions	6
Research Limitations	6
Justification and Significance of the Study	8
Summary	10
CHAPTER TWO: REVIEW OF THE LITERATURE	12
The First Leuba Study	12
The Second Leuba Study	17
The Mayer Study	19
The First Larson Study	21
The Second Larson Study	22
Religiosity of American University Scholars	26
Religious Beliefs of Americans, Physicians, Psychiatrists, Psychotherapists	27
The Various Cultures of Psychology	28
The Relationship Between Religion and Science	30
The “Secularization Thesis”	32
Summary	33
CHAPTER THREE: METHODOLOGY	34
Method	34
Research Questions	35
Instrument	36
Selection of Participants	38
Feasibility	38
Timetable and Plan for Mailing Questionnaires	41
Survey Strengths, Problems, and Solutions	44
Reliability and Validity	46
Analysis of the Data	47
Summary	49
CHAPTER FOUR: RESULTS	50
Introduction	50

Response Rate, Timeline, and Demographics	50
Item Responses	52
Belief in God	55
Supernatural: Spirituality, mind-body problem, soul, non-physical existence	56
Spirituality: Desire for, opposition to, or neutrality with regard to it	58
Mysteries, uncertainties, ambivalences, paradoxes, unknowable things	59
Hard to know what immortality means	61
Defining the self, identity	62
Reconciled with death/existence?	63
What is most important, special, or how meaning is found.	64
Rationality	65
Meditation, LSD, Club on the Head, Altered States	66
Money	67
Summary	68
CHAPTER FIVE: CONCLUSIONS	69
Summary of the Main Findings	69
Limitations and Opportunities of the Current Study	72
Implications and Directions for Further Research	77
Summary	86
APPENDIX A: QUESTIONNAIRE USED IN FIRST LEUBA STUDY	87
APPENDIX B: QUESTIONNAIRE USED IN MAYER STUDY	88
APPENDIX C: LARSON AND WITHAM'S DEPICTION OF HOW LEUBA PHRASED HIS 1916 QUESTIONNAIRE	89
APPENDIX D: 2006-2007 N.A.S. MEMBERS IN PSYCHOLOGY SECTION	90
APPENDIX E: COVER LETTER—TEXT AND PHOTOCOPY VERSIONS	92
APPENDIX F: THE QUESTIONNAIRE	94
APPENDIX G: ENVELOPE	95
APPENDIX H: POSTCARD REMINDER (FRONT AND BACK)	96
APPENDIX I: SECOND LETTER	97
APPENDIX J: THIRD LETTER	98
APPENDIX K: POSTCARD INCLUDED WITH THIRD LETTER	99

APPENDIX L: CONFIRMATION LETTER	100
APPENDIX M: QUESTIONNAIRE TIMELINE AND RESPONSES	101
APPENDIX N: INTERVIEW —RESPONDENT 37BK	121
APPENDIX O: INTERVIEW —RESPONDENT 30BD	133
APPENDIX P: INTERVIEW —RESPONDENT 28BB	142
APPENDIX Q: INTERVIEW VIA EMAIL —RESPONDENT 27BA	158
APPENDIX R: INTERVIEW —RESPONDENT 29BC	166
APPENDIX S: INTERVIEW —RESPONDENT 19AS	169
APPENDIX T: INTERVIEW —RESPONDENT 15AO	170
REFERENCES	174
VITA	189

## **CHAPTER 1: INTRODUCTION**

### **Introduction**

In 1914, James Leuba surveyed the eminent psychologists of the United States with regard to their belief in God and immortality (Leuba, 1916). In 1933, he replicated the survey (Leuba, 1934). His results affirmed, he stated, "that, in general, the greater the ability of the psychologist as a psychologist, the more difficult it become [*sic*] for him to believe in the continuation of individual life after bodily death" (1916, p. 279). He concluded that eminent behavioral scientists were least likely of all scientists to believe, and that psychological learning made belief in an "interventionist God... almost impossible" (1934, p. 294). He further stated, "If knowledge is, as it seems, a cause of the decline of the traditional beliefs, that decline will presumably continue as long as the increase in knowledge" (1934, p. 300). In 1958, Mayer (1959) replicated Leuba's survey.

### **Statement of the Problem**

The results of the initial survey and the two replications of the survey were consistent with Leuba's hypotheses. However, no one had replicated that survey of eminent psychology scholars in almost fifty years before this study. How could we have known whether or not the trend that Leuba predicted had continued unless empirical data were collected and recorded? Today's eminent psychology scholars needed to be surveyed.

## **Purpose of the Study**

The purpose of this study was to determine the extent to which eminent psychology scholars in the United States believed in God and immortality, and to gauge whether or not the proportion of such beliefs had decreased during the last ninety-three years, as Leuba predicted. More precisely, the purpose of this study was to replicate, as nearly as possible, a survey administered twice by Leuba and also administered decades later by Mayer. As Johnson and Christensen stated, “To be an effective consumer of research, you should not and must not consider the results of any one study to be conclusive. You need to look across studies to see whether the findings are repeatedly confirmed or replicated” (2004, p. 86).

Thus, this study included descriptive research. It was descriptive in that it used a questionnaire and interviews to gather data from the population being studied. I mailed the questionnaire to each individual respondent via the United States Postal Service mail system. The respondents replied to the survey and mailed it back to me. The respondents who were willing to be interviewed, were interviewed by me. Then, those data were organized and presented systematically so as to provide factual and accurate information about the population to the appropriate discourse community.

## **Research Questions**

1. To what extent do eminent psychology scholars believe in God?
2. To what extent do eminent psychology scholars believe in immortality?



3. Has the percentage of the eminent psychology scholars who believe in God changed since 1914?
4. Has the percentage of the eminent psychology scholars who believe in immortality changed since 1914?
5. What are the characteristics of the spiritual and religious beliefs of eminent psychology scholars?

### **Definitions of Terms**

NAS – Refers to the National Academy of Sciences.

APA – Refers to the American Psychological Association.

First Leuba Study - The survey conducted in 1914, as reported by Leuba in 1916.

Although the study included surveys of several distinct populations, only the part that distinctly included eminent psychology scholars will be referred to herein. Thus, in the current study, unless stated otherwise, when the First Leuba Study is cited, it will refer to only that part of Leuba's 1916 study that included eminent psychology scholars. (See Appendix A for the questionnaire) Also, various differences between the first (1916) and second (1921a) editions of Leuba's *The Belief in God and Immortality* are not insubstantial, so any reference to the First Leuba Study herein relies on the first edition (1916) unless the second edition (1921a) is specified.

Second Leuba Study - The survey conducted in 1933, as reported by Leuba in 1934.

Although the study included surveys of several distinct populations, only the part that distinctly included eminent psychology scholars will be referred to herein. Thus, in the

current study, unless stated otherwise, when the Second Leuba Study is cited, it will refer to only that part of Leuba's 1934 study that included eminent psychology scholars.

Mayer Study - The survey conducted in 1958, as reported by Mayer in 1959. Although Mayer's study included surveys of several distinct populations, only the part that distinctly included eminent psychology scholars will be referred to herein. Thus, in the current study, unless stated otherwise, when the Mayer Study is cited, it will refer to only that part of Mayer's study that included eminent psychology scholars. (See Appendix B for the questionnaire)

First Larson Study - The survey conducted in 1996, as reported by Larson and Witham in 1997. This survey included no eminent psychologists.

Second Larson Study - The survey conducted in 1998, as reported by Larson and Witham in 1998. This survey included no eminent psychologists.

Eminent Psychologists – Represented in the various literature primarily as “eminent psychologists,” “greater psychologists,” “psychologists of greater distinction,” or “eminent psychology scholars.”

The First Leuba Study divided respondents into two groups: those of "lesser distinction" and those of "greater distinction" (pp.247-248). The "greater" psychologists included approximately 26% of the members of the American Psychological Association (APA) who were identified by people who were "competent" to select the "greater" psychologists from the APA membership list (Leuba, 1916, pp. 259, 266).

In the Second Leuba Study, it was stated that the "group of the Greater Psychologists was made up of the 50 starred names added since 1906 to the psychologists

already starred in the edition of the *American Men of Science* of that date" (1934, p. 296). In the earlier editions of *American Men of Science*, a star next to a name indicated that the person was a more distinguished scientist. Thus, Leuba's eminent psychologists in the 1933 survey were comprised of the "starred" psychologists in the 1933 edition of the *American Men of Science* who were not listed as "starred" names in the 1906 edition.

The Mayer Study designated as "eminent psychologists" all twenty-three of the psychologists who were listed as members of the NAS in the 1957 *Proceedings of the National Academy of Sciences* (pp. 649-680). It also identified as "eminent behavioral scientists" both the twenty-three NAS psychologists and the twelve NAS anthropologists (for a total of thirty-five members).

Likewise, the survey I administered designated the psychologists who were currently members of the NAS to be eminent psychology scholars.

Belief in God – As described in the First Leuba Study, respondents were asked whether they believed "in a God to whom one may pray in the expectation of receiving an answer. By 'answer,' I mean more than the subjective psychological effect of prayer."

Belief in immortality – As described in the First Leuba Study, respondents were asked if they believed in conditional or unconditional continuation of the person after death in another world.

01AA, 02AB, etc. – The survey respondents are generally referred to herein as "01AA" rather than "respondent 01AA." The respondents' identities go in numerical-alphabetical order from 01AA to 62CJ. Furthermore, the pronoun "he" or "him" is used when referring to any of the respondents regardless of their actual gender or sex.

Ellipses in interviews – In the interviews (Appendices N-T), an ellipsis without brackets indicates a lapse of time or a pause in speech. An ellipsis within brackets indicates either one word or a few words were deleted—unless there is an extra period within the brackets, in which case at least one sentence was deleted. These deletions are few; they serve the purpose of ensuring anonymity or confidentiality for the respondents.

### **Assumptions**

I assumed that the participants would be honest as they answered the survey questions. I also assumed that the psychology scholars who were members of the National Academy of Sciences were reasonably acknowledged to be "eminent " psychologists.

### **Research Limitations**

Even the most candid survey respondents may have been betrayed by their failing or distorted memories:

Other than Wilder Penfield's work, there is no research to suggest that memory works like a video recorder, capturing every part of an experience exactly as it happens. Normally, what a person recalls is not an exact replication of an event, according to Elizabeth Loftus, a leading memory researcher. Rather, a memory is a reconstruction—an account pieced together from a few highlights, using information that may or may not be accurate (Loftus & Loftus, 1980). Put another way, 'memory is not so much like reading a book as it is like writing one from fragmentary notes' (Kihlstrom, 1995, p.341). Ample evidence indicates that memory is quite often inaccurate. 'Critical details of an experience can be forgotten or become distorted, their source and order may be misremembered, and under certain circumstances completely new details may be incorporated into a memory' (Conway et al., 1996, p. 69). Recall is, even for people

with the most accurate memories, partly truth and partly fiction. (Wood, Wood, & Boyd, 2004, pp. 204-205)

Most fundamentally, this study did not subject the hypotheses to “grave risk of refutation *modus tollens*, but only to a rather feeble danger” (Meehl, 1978, p. 821). This is not unusual in psychological experiments, and it happens mainly because

the null hypothesis is, taken literally, always false.... A little reflection shows us why it has to be the case, since an output variable such as adult IQ, or academic achievement, or effectiveness at communication, or whatever, will always, in the social sciences, be a function of a sizable but finite number of factors.... In order for two groups to be *exactly* equal on such an output variable, we have to imagine that they are exactly equal *or* delicately counterbalanced on all of the contributors in the causal equation, which will never be the case.... If you have enough cases and your measures are not totally unreliable, the null hypothesis will always be falsified, *regardless of the truth of the substantive theory*. (Meehl, p.822)

"The field of psychology is not of a single mind on a number of issues surrounding the conduct and reporting of what is commonly known as null hypothesis significance testing" (American Psychological Association, 2001, p. 21). Furthermore, many researchers cannot agree on how to do power analyses, or even the proper identification of which hypotheses are the research hypotheses and which are the null hypotheses (Cohen, 1990).

Thus, working within these inevitable constraints, I have drawn conclusions that are typical in social science today. The operational, statistical measurements will allow for a reasonable pursuit of the substantive theories.

## **Justification and Significance of the Study**

This study was significant because “the university is the conscience of the culture, the most important institution in Western culture” (Dugger, 1974). Its psychology faculty members’ attitudes about supernatural and eschatological matters are important and relevant. The study also contributed to the knowledge about psychology scholars’ attitudes that is available to academic administrators, government officials, and faculty members.

The primary justification for this research was that it was interesting. I encountered no one who expressed that they were not interested in the matter. On the contrary, many people expressed strong opinions related to the topic. Furthermore, the community of psychology researchers is interested in the topic, as was demonstrated by a recent *Observer* (American Psychological Society periodical publication) that was devoted to the theme of the relationship between religion and psychology (Bloom, 2005; Kagan & Snidman, 2005; Leshner, 2005; Myers, 2005; Sokol, 2005; Stocker, 2005); a substantial part of a recent edition of *Academe: The Bulletin of the American Association of University Professors* was devoted to the topic of religion in higher education (Krebs, 2006; Hill, 2006; Wagner, 2006; Hardy, 2006; Keshavarz, 2006; Olszewski, 2006); and the topic has been discussed in many recent editions of the *Chronicle of Higher Education* (e.g., Appleyard, 2006; Chaszar, 2006; Martin, 2006).

Leuba justified his studies by saying, "Curiosity as to the beliefs of scientific men is justified, for they enjoy great influence in the modern world, even in matters religious" (1934, p. 291).

Mayer stated it thusly:

The role of the scientist at Mid-Twentieth Century is one of unequalled prestige in the eyes of the general Public. The position of leadership in technological advancement which he enjoys raises certain questions concerning the nature of his attitudes and beliefs, especially in areas of considerable concern to the lay person. Do scientists believe in God? In immortality? Do they desire immortality? Are their religious beliefs different from the general population? If scientists are different, when does this differentiation begin—in college, in graduate school? Or is there a selective factor contributing to both scientific interest and religious attitude? Does their assumption about a strictly determined universe preclude belief in a being who transcends and manipulates natural phenomena? Can a scientist be eminent and maintain traditional religious concepts? (Mayer, 1959, p.1)

Larson and Witham conceded these points and followed up with their partial replications. The first and second Larson studies were the most recent partial replications of the first Leuba study. According to Larson and Witham,

Eighty years ago, Leuba wrote that scientific knowledge would demand ‘a revision of public opinion regarding the prevalence and future of the two cardinal beliefs of official Christianity.’ He asserted: ‘The essential problem facing organized Christianity is constituted by the widespread rejection of its two fundamental dogmas.’ Though a noted psychologist, Leuba misjudged either the human mind or the ability of science to satisfy all human needs. Such is the risk of making historical predictions.

Although the previous statements about justification and significance are important, perhaps the most compelling is this: When Larson and Witham investigated the religious beliefs of eminent scientists in 1998, they concluded that biologists had the lowest rates of belief in God and immortality. The problem is that their study—unlike all the previously published uses of that identical questionnaire with eminent U.S. scientists (Leuba, 1916; Leuba 1934; Mayer, 1959)—did not include psychologists in its sample.

This matters because the previous surveys consistently found that *psychologists*, not biologists, were the scientists who were least likely to express belief in God or immortality. Why would Larson and Witham not have included psychologists in their replication? That's like doing a survey on jolly-ness and not including Santa Claus—especially if he had been included in all the previous surveys. The potentially misleading information provided by Larson and Witham has since propagated out to other influential publications (e.g., Richards, 2007; “Does neuroscience threaten human values?” 1998). Thus, it would be useful to generate data that would support or refute the theories of Leuba, Mayer, or Larson and Witham, by replicating the study and including eminent psychology scholars as the respondents.

The manner of using the questionnaire and interviews for the study was justified. All of the people who have used Leuba's questionnaire have been academics of great distinction. Leuba's questionnaire has been used both by psychologists and by academics outside of the psychological community. The same questionnaire has been used by researchers of widely differing theological backgrounds. For example, Leuba professed himself to be an atheistic scientist, but Larson and Witham were both church members who have received funding from conservative organizations that support the idea of the importance of God.

## **Summary**

This chapter provided an overview and introduction to the study, a statement of the problem, the purpose of the study, the research questions, the null hypotheses, the



alternative hypotheses, the definitions of terms, assumptions, research limitations, and the significance of the study. The second chapter will provide a review of relevant literature.

## **CHAPTER 2: REVIEW OF RELATED LITERATURE**

### **The First Leuba Study**

James Leuba was “one of the pioneers in psychology.... The psychology laboratory which he founded at Bryn Mawr [College] shortly after his appointment there in 1898 and from which he published some studies of perception was one of the first dozen in the country” (McBride, 1947, p. 645).

In 1914, amidst publishing a number of notable books and articles about the psychology of religion (Leuba, 1912, 1913, 1915, 1917b, 1921b, 1925, 1933), he mailed the questionnaire for the First Leuba Study (Leuba, 1916). The questionnaire, which inquired about the status of the respondent’s belief in God, belief in immortality, and desire for immortality (see Appendix A) was mailed to 1,504 scholars in the United States. The respondents included historians, sociologists, biologists, physicists, psychologists, and mathematicians. The physicists, biologists, astronomers, and mathematicians were randomly selected from the names listed in the second edition of the *American Men of Science* (Cattell, 1910). The historians were randomly selected from the membership list of the American Historical Association (Leuba, 1916, pp. 258-259), the sociologists were randomly selected from the membership list of the American Sociological Society (Leuba, 1916, pp. 262-263), and the psychologists were randomly selected from the membership list of the American Psychological Association (Leuba, 1916, pp. 266-267).

For each of these groups of scholars, Leuba distinguished between the “lesser” members and the “greater” members. For example, the mathematicians, biologists,

astronomers, and physicists of “greater eminence” were designated as such because the *American Men of Science* had a star or an asterisk next to the names that the directory’s editor, James McKeen Cattell, had designated as being of greatest distinction in their fields. Cattell had received assistance from

twelve of the most distinguished men in each science. From these men, Dr. Cattell asked and received, for each science, twelve lists containing a definite number of names arranged in the order of their distinction, according to the opinion of the makers of the lists. From the twelve lists in each science, Dr. Cattell compiled, according to a method described in an Appendix to *American Men of Science*, the lists of names starred in that volume. (Leuba, 1916, p. 249)

Likewise, the names of “greater” psychology, sociology, and history scholars were compiled from lists that had been “prepared by competent persons” (Leuba, 1916, p. 259). Leuba did not elaborate on this method of selection. Of the physicists, biologists, astronomers, and mathematicians, approximately 1 out of every 5.5 were designated as greater; of the historians, approximately 1 out of every 3.7 were greater; and of the psychologists, approximately 1 out of every 3.8 were greater. Of the sociologists, a similar number were designated as greater; however, the group was divided into three subgroups instead of two.

Of the 288 names on the membership list of the American Psychological Association in 1914, Leuba (1916)

eliminated the names of all those who do not teach psychology (making an exception, however, in favor of those engaged in scientific psychological research), those teaching in Roman Catholic institutions and exclusively in medical schools, and those who are decidedly educators or philosophers rather than psychologists.... In a list thus reduced to about two-thirds of its original length, fifty names were singled out as those of the more distinguished psychologists; and marking the remaining names according to a rule of chance, I obtained 57 lesser psychologists. (pp. 266-267)

Leuba noted that he excluded the medical school teachers because they usually tended to be “physiologists rather than psychologists” (p. 266).

Leuba stated that he sent a second request to addressees who did not respond to the first request to fill out and return the questionnaire. There is no evidence, however, that he sent more than two requests to each addressee. More than 75% of the addressees filled out their questionnaires and returned them, some of the respondents having written unsolicited comments on the questionnaires. Almost 10% did not return the questionnaire at all; Leuba assumed that “an indeterminable number may be put down as dead, or critically ill, or absent. The failure of these to answer may be considered as not affecting the statistics, since there is no reason to think that the dead, the critically ill, and the absent belong entirely or predominantly to a particular class of believers” (pp. 226-227).

Of the 14.7% whose questionnaires were returned blank, 22 of them were reported as dead, 26 as not found, away, or ill, and “a large number” of the unanswered questionnaires were returned with remarks that the questionnaire was too personal or private, or that the respondent did not know how to respond to the questions (p. 227).

For the subgroup of psychologists, the percentage of questionnaires not returned was much smaller than for the other groups. Only four of the psychologists did not return the questionnaire. Of those who returned the questionnaires, eight of the greater left them blank, and four of the lesser left them blank. (Two of these explained, at length, why they were reluctant to answer the questionnaires. For example, one of them wrote, in part, “I am not sure that I can completely or accurately account for this reluctance. Very

likely I cannot account for it. I regret it none the less, for I would gladly coöperate [sic] with you in your investigation; but I seem to be profoundly inhibited for some reason, or lack of reason” (Leuba, 1916, p. 232).)

The results showed that the psychology scholars were generally less likely than any of the other scholars to express belief in God, belief in immortality, or desire for immortality. Of the respondents in the subgroup of all psychologists, 24.2% indicated that they believed in God. Therefore, more than 75% were agnostic, doubters, or disbelievers. 13.2% of the greater psychologists expressed belief in God, and 32.1% of the lesser psychologists expressed belief in God. On the question of belief in immortality, 19.8% of the total psychology subgroup expressed belief (8.8% of the greater, 26.9% of the lesser). All of the believers in immortality expressed a desire for immortality; 34.7% of the non-believers in immortality expressed a desire for immortality; 47.2% of all of the psychology subgroup respondents expressed that they did not desire immortality (p. 267). Some of the respondents also included extra comments in the margins. One respondent replaced the word “belief” with the word “hope” (p. 268). Also, the subgroup of psychologists was the only one in which the percentage of believers in immortality (19.8%) was less than the percentage of believers in God (24.2%) (Ogburn, 1917).

The more striking facts discovered are that, regarding the number of believers, the classes [subgroups] arrange themselves in the following descending order, historians, physical scientists, biological scientists, sociologists, and psychologists; that in each class the more distinguished group counts a much smaller number of believers than the less distinguished; and that there is a much larger number of believers among the women than among the men (82 percent against 56 percent). (Leuba, 1917b, p. 111)

Leuba further noted the following:

In three of these groups (biologists, historians, and psychologists) the number of believers among the men of greater distinction is only half, or less than half the number of believers among the less distinguished men. I do not see any way to avoid the conclusion that disbelief in a personal God and in personal immortality is directly proportional to abilities making for success in the sciences in question. (Leuba, 1916, p. 279)

Contemporary scholars' reactions to the First Leuba Study ranged from approval to disapproval. For example, Wright (1917a, p. 402) stated, "The questionnaires were carried on with great care and thoroughness, and this portion of the book deserves the study of all interested in possible methods for the investigation of the prevalence of beliefs in contemporary society." Kantor (1917b), however,

completely failed to realize how Professor Leuba could set himself such a meaningless task involving so unscientific a methodology.... There is absolutely no clue as to why the physicist should be more liable to believe in the type of God that Professor Leuba indicates than any other type of presumably informed person. It is easy to see that Professor Leuba wants his concepts to be so defined as to fall below the critical horizon of any informed individual. On this basis his results might be formally true, but entirely irrelevant. The entire statistical study then, in its emphasis of a primitive concept with the intellectual criterion of rejection, illustrates an attempt to break logic with the usual disastrous consequences. (p. 114)

Also, Ogburn (1917) found, with regard to the First Leuba Study, "It was impossible to test by certain statistical methods some of his conclusions because unfortunately exact numbers are not given. It is decidedly to be regretted that full tables were not given.... In only a few cases does he give percentages and in only one case does he give numbers" (p. 418).

## **The Second Leuba Study**

In 1933, Leuba mailed out virtually the same survey that he had used in the First Leuba Study (Leuba, 1934). The investigation made in 1933 was carried out in the same way as that of 1914 (Leuba, 1934, p. 297). Again, the 1933 edition of *American Men of Science* was used as a source of addressees. The statements submitted to the addressees were identical. However, historians and mathematicians were not included in this survey; only biologists, physicists, sociologists, and psychologists were included in the 1933 survey. Leuba did retain the practice of distinguishing between lesser and greater scholars.

The psychology scholars were selected from the 1933 Year Book of the American Psychological Association. 114 names were randomly selected from among the active members who taught psychology or engaged in research. In addition to those lesser scholars, the group of greater psychologists was “made up of the 50 starred names added since 1906 to the psychologists already starred in the edition of *American Men of Science* of that date” (Leuba, 1934, p. 296).

Leuba received at least 75% of the questionnaires back in each of the subgroups (biologists, physicists, sociologists, and psychologists). “Among the sociologists and the psychologists the proportion rose to 83%; and, among the 50 ‘more distinguished’ representatives of the latter class, it reached 90 percent” (p. 293).

Of the entire subgroup of psychologists, 10% expressed belief in God as described in the questionnaire, 79% expressed disbelief, and 12% expressed doubt (These numbers—10, 79, and 12—do not add up to 100. Therefore, Leuba (1934), in a footnote

on page 294, states, “The total of the believers and doubters in any group should be 100; but as I counted as one the halves and the fractions over the half and dropped the other fractions, the sum may be 101 or 99.”). Nine percent expressed belief in personal immortality as described in the questionnaire, 70% expressed disbelief, and 91% expressed either disbelief or doubt. As with the First Leuba Study, in the Second Study there were differences between the lesser and greater psychologists. Whereas 13% of the lesser psychologists believed in God, only 2% of the greater did. Likewise, 12% of the lesser psychologists believed in immortality, but only 2% of the greater did. The data also showed that the physicists were most likely to believe in God (38%). Psychologists were least likely to believe in God (10%). The biologists and the sociologists occupied intermediary positions. Leuba concluded that the data revealed that “the larger proportions of believers are found in the following categories of persons: (1) the scientists who know least about living matter, society, and the mind,” (2) the less eminent scholars, and (3) the respondents of the First Leuba Study (p. 299).

There is a discrepancy in Leuba’s reporting about his number for the 1933 survey. On page 296, he (1934) reported that 2% of the eminent psychologists believed in God. Sixteen years later, in his *Reformation of the Churches*, he (1950) stated the number at 12%. This number (12%) was repeated by Brown (2003, p. 617) and Mayer (1959, p. 82), even though it doesn’t add up appropriately. The 2% number correctly allows for Leuba’s 1933 group’s response to add up to 100%; 12% would have made the number go up to a peculiar and unexplained 110%.



## **The Mayer Study**

Mayer (1959) sent Leuba's questionnaire out to all 578 members of the National Academy of Sciences in 1958. After sending two reminders to those addressees who had not already responded, Mayer ended up with approximately 65% of the NAS members (376) responding. This group included 35 behavioral scientists: 23 psychologists and 12 anthropologists. Instead of using the term "greater," Mayer referred to the NAS psychologists as "Eminent" psychologists. Of the 23 eminent psychologists, 17 returned the questionnaire completed; of the 12 eminent anthropologists, 8 returned the questionnaire completed.

Six percent of the psychologists expressed belief in God as described on the questionnaire, and six percent expressed belief in immortality as described on the questionnaire (Mayer, 1959, p. 82). Mayer also provided data for all the behavioral scientists (thus simply combining the psychologists' and anthropologists' responses). Eight percent of the behavioral scientists as a whole expressed belief in God; likewise, eight percent expressed belief in immortality. Of this group, 10% expressed "intense" desire for immortality, 24% expressed "moderate" desire for immortality, and 67% expressed no desire for immortality (p. 61).

While Mayer stated that, "There is some indication that behavioral scientists, when compared to other fields, do not as frequently believe in God," he also conceded that there was not a significant enough difference between the scholars in the different fields of specialization in his survey (p. 68). He had not sent out his survey to as many people as Leuba had. Whereas the questionnaire in the First Leuba Study was sent to 57

lesser and 50 greater psychologists, and the questionnaire in the Second Leuba Study was sent to 114 lesser and 50 greater psychologists, the Mayer Study sent questionnaires to only 23 Eminent (greater) psychologists.

As with the Leuba Studies, Mayer received letters and notes from respondents saying that they were unable to express religious convictions “by means of a check mark” (p. 94), or they wrote that the questionnaire was too personal. Some “appeared irritated at being asked to consider the concept of God within any context” (p. 94). Mayer proposed this explanation:

The fact that many Eminent seemed disturbed by the whole business of a questionnaire [sic] may suggest emotional involvement with religious concepts which have not been personally clarified. As regards the concept of a personal God, some may experience considerable conflict between a personal acceptance on the one hand, and a superficial academic rejection on the other. For some the conflict may be between a superficial acceptance of the concept of a personal God and a vague awareness of commitment to the deterministic position underlying science.... The personality characteristics which contribute to success in science may be those which are antithetical to religious beliefs. As Leuba suggested, disbelief reflects ‘imaginativeness, nonconforming tendencies, a willingness to separate oneself from cultural values, a self-reliance which permitted alienation from the group.’ (pp. 95, 98)

Finally, it must be noted that the Mayer Study is not without error. For example, he reports (p. 82) that the Second Leuba Study stated that 12% of eminent psychologists believed in God, but in actuality the Second Leuba Study stated that number to be only 2% (p. 296). I must note, however, that even Leuba (1950, p. 47) himself later misstated this number as 12%.

Also, The Mayer Study reported (p. 82) that the First Leuba Study stated that 13% of eminent psychologists believed in God and 9% of eminent psychologists believed in

immortality, whereas the First Leuba Study actually stated (p. 267) these numbers to be 13.2% and 8.8% respectively. In other words, Mayer appears to have further rounded these figures without having access to the raw data.

### **The First Larson Study**

In 1996, Larson and Witham (1997) mailed the Leuba questionnaire to a sample of scientists randomly selected from the 1995 edition of the *American Men and Women of Science*. However, this First Larson Study included as respondents only biologists, mathematicians, physicists, and astronomers, but not psychologists, sociologists, historians, anthropologists, or any other group of scholars. Larson et al (1997) stated that they, “replicated Leuba’s [1914] survey as exactly as possible” (p. 435), but psychologists were not included—as they were in the First and Second Leuba Studies and the Mayer Study. Also, although the questionnaire used in the First Larson Study (see Appendix C) was represented as being “how Leuba phrased his 1916 survey of American scientists,” it actually has a few slight differences from the questionnaire used in the First Leuba Study (see Appendix A). The questionnaire that was presented in the First Larson Study as being the questionnaire used by Leuba in 1916 was actually slightly different than that first questionnaire, and slightly different from another very similar questionnaire used by Leuba for other purposes. The questionnaire that the First Larson Study represented as Leuba’s questionnaire was not precisely the same as either of the questionnaires that Leuba (1916, pp.224-226) mentioned, and it also did not appear to be

a questionnaire that was arbitrarily changed, but rather appeared to be the admixture or commixture of the two questionnaires Leuba presented.

Furthermore, the top three numbers (39.3, 45.3, and 14.5) in the second column of Table 1 (of the First Larson Study) did not add up to 100, as they apparently should have. These numbers were simply percentages of a population whose members each indicated one of three options; the three percentages simply should have added up to 100%. Larson et al (1997) did not offer a correction, nor did they state that some respondents might have answered the question by checking more than one answer or by checking none of the three answers so that the total responses might have added up to more or less than 100.

I must note, however, that an accurate and well-written article may have been submitted by Larson and Witham and then corrupted in the editing and publishing process. This idea will be further discussed in Chapter 5. Were it not for the inclusion of the display items (e.g., the Table, the depiction of the questionnaire) in this article, it is entirely possible that there might have been no errors, inconsistencies, or disingenuous statements in this article.

### **The Second Larson Study**

In 1998, Larson and Witham (1998) again replicated the First Leuba Study, but again they did not include psychologists. Instead, they sent the questionnaire to all NAS members who were biologists, mathematicians, physicists, and astronomers. So,

although four distinct subgroups of eminent scholars were included in this survey, eminent psychology scholars were not.

Furthermore, there were many incorrect numbers in this article. Approximately half of the numbers in Table 1 were incorrect and more than one-third of the numbers in the article as a whole were incorrect. The lower right column of Table 1 in the Second Larson Study (1998, p. 313) includes three numbers (7.9, 76.7, and 23.3) that should add up to approximately 100, but do not. Larson (personal communication, November 3, 2005) stated that the Table was misprinted and that the three numbers should be 41.6, 45.6, and 13.4. However, those numbers add up to 100.6; given that there were only three numbers and each one went one digit beyond the decimal point, the three numbers should have added up to a number no lower than 99.7 and no higher than 100.3.

Leuba reported that 13% of his eminent psychologists believed in God in 1933, but Larson (1998, p. 313) reported that Leuba had said it was 15%. Leuba reported that 71% of his eminent psychologists disbelieved in God in 1933, but Larson (1998, p. 313) reported that Leuba had said it was 68%. Leuba reported that 16% of his eminent psychologists had no definite belief regarding this matter in 1933, but Larson (1998) reported that Leuba had said it was 17% (p. 313). Leuba reported that 15% of his eminent psychologists believed in immortality in 1933, but Larson (1998) reported that Leuba had said it was 18% (p. 313). Leuba reported that 56% of his eminent psychologists disbelieved in immortality in 1933, but Larson (1998) reported that Leuba had said it was 53% (p. 313). The reason for these incorrect numbers was not explained.

Larson and Witham (1998) also presented more precise numbers than would have been calculable given Leuba's 1916 data. Leuba reported that approximately 31.7% of his eminent psychologists believed in God in 1914, but Larson reported (1998) that Leuba had said it was 27.7% (p. 313). Likewise, Leuba reported that approximately 37% of his eminent psychologists believed in immortality in 1914, but the Second Larson Study reported that Leuba had said it was 35.2% (p. 313). In both of these cases, the Second Larson Study reported the numbers representing only approximately half of the respondents (one "division" rather than both "divisions," as Leuba called them (1916).

Larson and Witham also provided percentages that were more precise than Leuba's numbers would have allowed. For example, Leuba reported that approximately 50% of his eminent psychologists disbelieved in God in 1914, but Larson reported (1998) that Leuba had said it was 52.7% (p. 313). Leuba reported that approximately 20% of his eminent psychologists had no definite belief either way with regard to God in 1914, but Larson reported (1998) that Leuba had said it was 20.9% (p. 313). Leuba reported that approximately 30% of his eminent psychologists disbelieved in immortality in 1914, but Larson reported (1998) that Leuba had said it was 25.4% (p. 313). Leuba reported that approximately 32% of his eminent psychologists had no definite belief either way with regard to immortality in 1914, but Larson reported (1998) that Leuba had said it was 43.7% (p. 313).

Even within the Second Larson Study article itself can be found inconsistency and possible disingenuousness. In the fourth sentence of the first paragraph, they state that amongst Leuba's 1914 eminent scientists, the number of disbelievers and doubters in the

existence of God “rose to near 70%” (p. 313). However, in the Table 1 next to this statement, 52.7% and 20.9% (p. 313) are used to represent this same number. Adding 52.7 and 20.9 equals 73.6. Is it accurate to say that 73.6% is a number that “rose near to 70%”?

Also, in reporting their return rates, Larson and Witham stated, “our returns stood at *about 60%* for the 1996 survey and *slightly over 50%* from NAS members” (1998, p. 313) [emphasis added]. One wonders whether the authors were possibly representing the percentages in a subtly disingenuous manner.

I must note, again, that an accurate and well-written article may have been submitted by Larson and Witham and then corrupted in the editing and publishing process. This idea will be further discussed in Chapter 5. Were it not for the inclusion of the display item (i.e., the Table) in this article, it is entirely possible that there might have been no errors, inconsistencies, or disingenuous statements in this article.

Any limits to the usefulness of the First and Second Larson Studies might be compounded by small errors made by other scholars, such as Wheeler (1997) misreporting a number in the Table in the First Larson Study; or larger errors such as Mangeloja (2003, pp. 4-5) misreporting that Larson and Witham (1998, 1997) made discoveries about “professors of... the social sciences (psychology, anthropology, sociology),” although the Larson Studies neither surveyed nor even commented upon professors of psychology, anthropology, sociology, or any other social science.

## Religiosity of American University Scholars

In 1969, the Carnegie Commission on Higher Education surveyed more than 60,000 American college professors (Ladd, Lipset, & Trow, 1969; Stark, Iannaccone, & Finke, 1996). In all measures that were taken in that study, the faculty in the “hard” sciences (e.g., physics, biology, mathematics) were revealed to be more religious than the faculty in the social sciences (Stark et al, 1996). The data showed that

it is, above all, faculty in psychology and anthropology who stand as towers of unbelief. The other social sciences remain relatively unreligious, but these two fields—the two most closely associated with theories of the ‘primitive’ and ‘religious’ mind—are true outliers. Compared to faculty in the physical sciences, psychologists and anthropologists are almost *twice* as likely to be irreligious, to never attend church, or to have no religion. The differences are of such magnitude that one can scarcely imagine their not influencing the tone of conversation, instruction, and research in these two fields. Indeed, these data suggest to us why rational-choice theories of religion evoke widespread skepticism, if not outright hostility among most social scientists. (Stark et al, 1996, p. 436)

That survey found that 33% of psychology professors in America were “religious” whereas 60% of mathematicians, for example, were religious (Stark et al, 1996, p. 436).

More recently, though, a yet-to-be-published survey (Glenn, 2005a; Glenn, 2005b; “Spirituality high among university scientists,” 2005) done by E.H. Ecklund and C. Scheitle has reportedly found that religiousness has become more prevalent amongst social-science professors than amongst natural-science professors. The survey, of 1,646 professors at 21 top-tier research universities “covers scholars in three natural-science fields (physics, chemistry, and biology) and four social sciences (sociology, economics, political science, and psychology). Among the natural scientists, 55.4 percent of the



respondents identified themselves as atheists or agnostics. Only 47.5 percent of the social scientists said the same” (Glenn, 2005a).

According to Glenn (2005a), at least one of the survey’s researchers has proposed that the shift of religiosity from natural sciences to social sciences has occurred because women—who tend to be more religious than men—have joined the ranks of social-sciences faculties at a rate much greater than they have joined the natural-science faculties: 27% of the social scientists in the more recent study were women, whereas only 16.7% of natural scientists were women.

Also, the Ecklund and Scheitle’s survey did not include anthropology professors—one of the two subgroups that was least likely to be found to be “irreligious” in the Carnegie Commission’s survey.

### **Religious Beliefs of Americans, Physicians, Psychiatrists and Psychotherapists**

Curlin, Lantos, Roach, Sellergen, and Chen (2005) surveyed U.S. physicians and used General Social Survey (NORC, 1998) data to estimate and compare the religious beliefs of Americans in general and American physicians. Curlin et al. (2005) found that 76% of physicians expressed a belief in God, and that 83% of the general U.S. population expressed a belief in God (p. 631). Likewise, it was found that 59% of the U.S. physicians held a belief in “life after death,” whereas 74% of people in the general U.S. population held such a belief (p. 631). The data for these two groups were collected separately, by different organizations. There were other differences—such as the surveys having been administered in different decades: for example, one survey was administered

approximately seven years after the other. The percentage of Americans who expressed belief in God was very close to the percentage found in a more recent survey: Gallup and Jones (2000) found that 79% of Americans “know God exists and... have no doubts about it....” (p. 187)

There have been other relatively recent surveys of religious beliefs of professionals who concern themselves with individuals’ physical or mental health and behavior. Neeleman and King (1993) surveyed psychiatrists who were working in several London teaching hospitals and found that 23% expressed a belief in God and that 27% reported a religious affiliation of some kind. Jensen (1986) surveyed a sample of U.S. mental health professionals: clinical psychologists, psychiatrists, clinical social workers, and marriage and family therapists. This survey found that psychotherapists were less active in conventional religious activity than the general population. However, an analysis of this survey by Bergin and Jensen (1990) determined that, although psychotherapists demonstrate lower rates of participation in conventional religious activities, there was nevertheless a substantial amount of spiritual or religious involvement “beyond or in addition to traditional conventions. There may be a reservoir of spiritual interests among therapists that is often unexpressed due to the secular framework of professional education and practice” (p.3).

### **The Various Cultures of Psychology**

While the phrase “the two cultures” is sometimes used explicitly (e.g., Van Leeuwen, 1998; Nunez, Poole, & Memon, 2003) in psychology, the concept of different

cultures in psychology has been communicated in other ways as well without necessarily using the words “the two cultures” (e.g., Lilienfeld, 2004; Goode, 2004; Wertheimer & Wertheimer, 1996; Shepard, 2001). The “Two cultures” may refer to scientific and humanistic (Wertheimer & Wertheimer, 1996), empirical and romantic (McHugh, 1994), science and “alternative ways of knowing” (Nunez et al., 2003), clinical and nonclinical (Nunez et al., 2003), researchers and practitioners (Goode, 2004), “positivist and scientific” and “post-positivist and humanistic” (Van Leeuwen, 1998), Christian and non-Christian (Shepard, 2001), or “soft” psychology versus all other psychology (Meehl, 1978).

Simonton (2004) demonstrated that psychology is a scientific discipline, and that it would reasonably be placed closer to biology than to sociology in the nature of its scientific status. Psychology’s beginnings as a scientific discipline have been placed in about the middle of the nineteenth century in Germany (Fuchs & Milar, 2003). However, since at least the 1950s, there have been efforts to get “psychology to work its way free from a dependence on simplistic theories of correct scientific conduct” (Wertheimer, 2004). As mentioned, above, science is not the only culture in psychology. There are at least two cultures—and maybe more than two (Kimble, 1984).

The humanistic, clinical, and practitioners tend to look at intuition and alternative ways of knowing much more than scientific or empirical psychologists (e.g., Lilienfeld, 2004; Goode, 2004; Nunez et al., 2003). “Empiricists believe that questions regarding human nature are best settled by scientific evidence, whereas romantics believe that such questions are best settled by intuition” (Lilienfeld, 2004, p. 1251). A common sentiment

of researchers is that clinical psychologists are “out of touch with research findings” (Goode, 2004).

Is there a culture of God in psychology? Ellis (2000) found his rational emotive behavior therapy to be compatible with many clients who have “absolutistic philosophies about God and religion” (p. 29). Aron (2004) found,

the effort to talk openly and directly about religious differences and the implications for psychoanalysis is enormously complicated and filled with a variety of dangers.... Religion generally, and God in particular, have remained taboo among analysts. And feelings about God run strong. Some people... have directly confronted me with their outrage. ‘Why are you bringing God into a professional meeting? If I want to hear about God I can go to my church or synagogue; why bring God into a psychoanalytic forum?’ Religious conflict, repression, and deep fears about religion pervade the history of psychoanalysis. (pp. 442-443)

Vande Kamp (1986) suggested that putting God in the center of psychology is a futile attempt to restore psychology to its original theological servant status. De Young (1976) outlined ways in which he saw psychology as a religion itself, especially in the realm of psychotherapy.

### **The Relationship Between Religion and Science**

There seems to be great tension between science and religion. Many laypeople in the U.S. do not believe that their religious views are compatible with science (Raloff, 1996). There is a widespread public perception that science and religion are antithetical (Raloff, 1996). Within the scientific community, there is considerable controversy about whether or not any kind of religion is acceptable, or even whether religious people should be allowed to be scientific leaders (Easterbrook, 1997).

Stories have been told that highlight these attitudes: While giving a speech at a conference that was funded by a foundation that seeks to build bridges between science and religion, Nobel-Prize winning physicist Steve Weinberg once stated, “I am all in favor of a dialogue between science and religion, but not a constructive dialogue” (Horgan, 2006, p. B18). Raymond Damadian, the inventor of the magnetic resonance imaging scanner, is widely believed to have been passed over for the 2003 Nobel Prize for Medicine because he happened to believe in creationism (Chang, 2004). On a societal scale, a general survey of European Citizens found that the people who attended religious services more frequently, were less likely to give correct answers on a science quiz (European Commission, 2005).

Attempts have been made at bridging the gap between science and non-empirical ways of viewing the world (e.g., Gould, 1997; Snow, 1959; Begley, 2006; Proctor, 2003). “A resolution might remain all neat and clean if the nonoverlapping magisteria of science and religion were separated by an extensive no man’s land. But, in fact, the two magisteria bump right up against each other, inter-digitating in wondrously complex ways along their joint border” (Gould, 1997, p. 17). “What science is is settled methodologically. It’s not that science rules out the supernatural as a precondition. But scientists want to apprehend the world, and there is no procedure for studying the supernatural. God is not a controlled variable” (Forrest, 2006, p. B1).

## **The "Secularization Thesis"**

The secularization thesis proposes that religious activity will decline as science, rationality, technology, and education levels increase. This definition of the secularization thesis is consistent with Leuba's hypothesis that, "if knowledge is, as it seems, a cause of the decline of the traditional beliefs, that decline will presumably continue as long as the increase in knowledge" (1934, p. 300).

The scholars who have articulated, debated, supported, and criticized the secularization thesis have not achieved consensus on how to define the secularization thesis, much less whether or not it is correct. It has been defined as a "*general* theory of *societal* change" (Lechner, 1991, p. 1104), but also as a theory that reveals how *individuals* act (Albrecht & Heaton, 1984). It has been challenged as being "not a sound theory" at all (Crippen, 1992, p. 220). And yet others claim that, "reports of the death of secularization theory have been greatly exaggerated" (Yamane, 1997, p. 109).

It is a poignant comment, perhaps on sociology in general but certainly on the sociology of religion, that its practitioners are in such profound disagreement about the central implications of present-day religious practice, belief, and institutions. It would not be difficult to document, from the work of the principle exponents of the discipline, the most radically divergent appraisals of the state of religion and religiosity. The secularization thesis, which summarizes self-evident truth to some, is rejected out of hand by others, who, however, approach the subject from quite diverse perspectives and who do not necessarily agree among themselves. Nor has the debate been sequential: contradictory appraisals have appeared virtually simultaneously and quite independently.... Economists are by no means so perplexed about whether modern society has seen a process of industrialization, nor are political scientists in fundamental dispute about democratization or bureaucratization. But the sociologists of religion differ radically over the reality of secularization. (Wilson, 1979, pp.268-269)

## Summary

This chapter reviewed the First Leuba Study and the subsequent replications that were performed in the ensuing decades by Leuba himself and then by Mayer and Larson and Witham. The results of those surveys showed that, of the eminent psychology scholars, 13.2% believed in God and 8.8% believed in immortality in 1914, 2% believed both in God and in immortality in 1933, and 6% believed in both God and immortality in 1958. It has also been shown herein that each of the studies—*as published*—appeared to be deficient in some way: For example, the Leuba Studies did not provide sufficient raw data, the Mayer Study misreported at least one datum from the Second Leuba Study, and some of the numbers in the Tables in the Larson Studies are misreported.

This chapter also reviewed the religiosity of other segments of our society, as well as the relationships between religion, science, and psychology. Finally, it explored the idea of the “secularization thesis.”

## CHAPTER 3: METHODOLOGY

### **Method**

Descriptive research was used in this study. It was descriptive in that it used a written questionnaire and interviews to gather data from a population being studied. The potential respondents (see Appendix D) were mailed a questionnaire (see Appendix F) by me. Enclosed with the questionnaire was a cover letter (see Appendix E). These were mailed in an envelope with the addressee's name and address hand-written by me (see Appendix G). (Please note that I sent one of each mailing to myself in addition to the respondents listed in Appendix D, and that I photocopied these mailings to myself for inclusion in Appendices E, G, H, I, J, and L; it should be noted that the relevant addressees for this survey were actually the people listed in Appendix D who had not yet responded.) If the potential respondents were willing to be interviewed by telephone, by email, or in person, they indicated this on the questionnaire. Then, those data were organized and presented systematically so as to provide factual and accurate information about the population.

Although descriptive research provides data about the population being studied, it cannot help determine what causes a particular behavior or occurrence—it cannot determine a causal relationship between variables. The research problems were identified. The hypotheses were formed. The data were analyzed. And finally the results were reported to the appropriate discourse community.

Thus, this was a quantitative study, but it was also a qualitative study.  
“Qualitative findings may be presented alone or in combination with quantitative data.



Recent developments in the evaluation profession have led to an increase in the use of multiple methods, including combinations of qualitative and quantitative data” (Patton, 1990, pp. 10-11). The data collection method included a brief questionnaire sent to each respondent via the United States Postal Service mail system. The first part of the survey instrument was a questionnaire that was developed by James Leuba (see Appendix A) in 1914 and was administered to the entire population. The original questionnaire included three questions. The current research added onto that original questionnaire five statements requesting that the respondent indicate agreement or disagreement using a Likert scale; the questionnaire also added an open-ended statement inviting respondents to provide more information about their religious or spiritual beliefs. The questionnaire used in the current project is in Appendix F and can be contrasted with the questionnaire used in the First Leuba Study (see Appendix A). The current project also added a question to the questionnaire asking if the respondent would be willing to be interviewed and, if so, how. Consequently, interviews with some of the respondents took place.

### **Research Questions**

1. To what extent do eminent psychology scholars believe in God?
2. To what extent do eminent psychology scholars believe in immortality?
3. Has the percentage of the eminent psychology scholars who believe in God changed since 1914?
4. Has the percentage of the eminent psychology scholars who believe in immortality changed since 1914?

5. What are the characteristics of the spiritual and religious beliefs of eminent psychology scholars?

### **Instrument**

The survey was administered by mailing a questionnaire (Appendix F) to the respondents. The first part of the questionnaire primarily covered three questions: 1) Does the respondent believe in God, 2) Does the respondent believe in immortality, and 3) Does the respondent desire immortality? The exact phrasing of the questionnaire was patterned after the First Leuba and Mayer questionnaires (Appendices A and B) and was stated as follows:

1. Concerning the belief in God:
  - a. I believe in a God to whom one may pray in the expectation of receiving an answer. *By "answer," I mean more than the subjective, psychological effect of prayer.....*
  - b. I do not believe in a God *as defined above.....*
  - c. I have no definite belief regarding this question.....
2. Concerning the belief in personal immortality, i.e., the belief in continuation of a person after death in another world:
  - a. I believe in - personal immortality for all people.....  
- conditional immortality, i.e., immortality for those who have reached a certain state of development.....
  - b. I believe neither in conditional nor in unconditional immortality of the person in another world.....
  - c. I have no definite belief regarding this question.....
3. I desire personal immortality
  - intensely.....
  - moderately.....
  - not at all.....

There have been several slightly varying versions of the questionnaire, but only the First Leuba Study and the Mayer Study provided reliable versions of the

questionnaire that were actually used with eminent psychology scholars. Also, as Mayer stated, “It should be kept in mind that the concept of God which Leuba proposed was special and specific.... Its sole purpose is to provide an opportunity of indicating disbelief in this concept. To quibble about the finer shadings of meaning which are possible is to engage in metaphysical polemics” (1959, p. 8).

Leuba (1916), the creator of the questionnaire, made these comments with regard to it:

In the present status of religion and of philosophy, there is only one fundamentally significant classification of the various conceptions of God. On the one side must be placed the conceptions that are consistent with the means of worship common to all the religions, original Buddhism and Comptism excepted; on the other, those that are not. Every book of worship at present in use implies a Being in direct affective and intellectual relation with his worshippers; a Being, therefore, endowed with will, feeling, and intelligence. The surrender of that conception would mean either the disappearance or the radical transformation of practically all the religions known to history.

Who would recognize the Christian religion, either Protestant or Roman Catholic, were all traces of direct communication with the Divinity now indicated in its liturgies to be removed? The Christian God and the knowable First Cause of Spencer, or the impassible Absolute of most contemporary philosophers, are essentially different conceptions which can be used interchangeably neither in religion nor in philosophy....

The expression ‘personal immortality’ is usually understood to mean the continuation after death of the conscious individual and implies the continuation of the sense of one’s identity. Any conception which does not include this sense of identity is not the one intended here. (pp.173-174)

Leuba (1916) further stated, with regard to justifying how the questionnaire (Appendix A) was articulated:

Readers may ask themselves why I did not formulate statements which would have separated more definitely those who merely lack the beliefs expressed in A1 and B1, from those ready to affirm their falsity. But can a sharp line of demarcation be drawn between these two attitudes? Evidently not; the terms, *belief*, *unbelief*, *doubt*, *uncertainty*, are susceptible of endless gradation.... In attempting to refine, should probably

have made matters worse. As a matter of fact, few were seriously troubled by the indefiniteness of these terms, and my purpose was as well, perhaps better served by the statements of the questionnaire as by any others. (pp. 242-243)

### **Selection of Participants**

The participants for the study were members of the National Academy of Sciences who are listed in the "psychology section." There were 62 NAS members in the psychology section (see Appendix D) during 2006-2007. Not included were the section's Foreign Associates and Emeritus members.

Curlin (2005, p.631) made a distinction between eligible and ineligible respondents (deceased or had incorrect address). Leuba, on the other hand, appeared to make presumptions about how many potential respondents were not responding because they were dead or too ill (1916). This study was an attempt at being a census survey. All members of the population were mailed questionnaires; none were presumed dead, ill, incapacitated, or ineligible.

### **Feasibility**

Two main problems drove the concern about feasibility. First was the question of whether the addressees would, in fact, return the questionnaires. Second was the cost of the survey.

Considerable evidence suggests that the previous incarnations of this survey had high return rates, and that behavioral scientists have been even more likely than other scientists and academics to return such a questionnaire. In the First Leuba Study, of the

50 participants, only 4 did not return the questionnaire and 8 returned it blank. In the Second Leuba Study, 90% returned the questionnaire. In the Mayer Study, almost 74% of NAS psychologists returned their questionnaires. The Second Larson Study had a return rate of "slightly over 50%" (p. 313) for the NAS members it surveyed; however, that survey did not include any behavioral scientists. The First Larson Study had a return rate of "about 60 percent" (p. 435), but it also did not include any eminent psychology scholars.

It is precisely this population from which the greatest return rate should have been expected. In discussing the return rates in his Second Study, Leuba noted, "Among the sociologists and the psychologists the proportion rose to 83 per cent; and, among the 50 more distinguished representatives of the latter class, it reached 90 per cent" (1934, p. 293). In the Mayer Study, the return rates were highest, by far, for the psychologists, at almost 74% (1959, p. 14). Visher, likewise, obtained the highest rate of returns from behavioral scientists.

Not only was this population more likely than most others to return this questionnaire, but some strategies could be used to increase the likelihood of questionnaires being returned. Toops (1926), for example, achieved a 100% return rate after mailing out six letters to his respondents—the last of which was a promise not to send any more if the form was completed and returned. This strategy was used in this study only to an extent: four mailings were sent out instead of six—and this study did not include in the final mailing the promise not to send any more.

Curlin, Lantos, Roach, Sellergren, and Chin (2005) achieved a 63% return rate for their questionnaire sent to U.S. physicians seeking information about their religious characteristics—even though it was 12 pages long. In describing the three separate waves of mailings of the questionnaire, Curlin (personal communication, January 2, 2006) stated, "733 responded to the first wave. 224 to the second. 88 were recruited to respond by calling them and faxing recruitment letters several weeks after the second wave. Finally, 99 responded to the third wave." In the third wave, Curlin noted, the respondents were told they would receive \$20.00 for participation. The current survey likewise mailed the questionnaire three times and included a two-dollar bill and a note to the potential respondents in the last mailing (see Appendix K). The last mailing was the fourth mailing, but it was only the third to include the questionnaire. The note included in the last mailing stated that the two-dollar bill was a gift, that the respondent would receive a check for \$20.00 if they completed and returned the questionnaire, and also that they would receive \$5,000.00 if they were the first respondent to identify any manner in which I breached my promise of confidentiality to them.

Even in the unlikely event that it would have become necessary to provide the monetary incentive to most of the respondents in the current study, the cost of the total project (including postage, envelopes, letters, questionnaires, phone calls, and monetary incentives) would not have exceeded \$1500.00—unless I breached my promise of confidentiality and was contacted by a respondent asking for the \$5,000.00.

As of the writing of this dissertation, I have no evidence that any of the respondents kept or spent any of the money that was sent to them. Appendix M shows

that some of the respondents returned the money to me. 42BP and 52BZ both returned the two-dollar bills with notes declining to participate in the survey. 51BY returned the two-dollar bill and the questionnaire not completed. 04AD returned the two-dollar bill with the completed questionnaire and wrote, “I find it offensive to be sent money with this questionnaire. Please do not send the \$20.” 25AY returned the \$20.00 check with a note saying the money was unnecessary, but requested a summary of the study findings when available. In a study of religion, it is not unreasonable to wonder whether or not a population perhaps worships money as some people apparently do. There are no particular data in this study that would strongly support that claim.

### **Timetable and Plan for Mailing Questionnaires and Interviewing**

Fowler (1993) showed that the greatest likelihood of a good return rate on a mailed survey occurred if 1) the survey was brief, easy to fill out, and included mostly closed questions, 2) non-response triggered follow-up reminders (perhaps even including a request via telephone call), 3) the entire mailing was professional in appearance, and 4) the recipient had no reason to think the survey was the first step in a sales pitch. The current study adheres to these guidelines.

The respondents received up to three separate mailings of the questionnaire, and a separate mailed postcard reminder. The first wave of these mailings was sent on the same day (November 17, 2006) including the one addressed to the one respondent outside of the country. Included in the first mailing were the questionnaire, a letter, and a stamped and addressed return envelope. The letter included the information required by

the University of Texas Institutional Review Board (IRB). Mayer's (1959) and Putman's (2001) dissertation cover letters were used as models for the letter I included in my mailing, and in a few places strings of words were copied verbatim. Also included was a stamped and addressed return envelope.

Eleven days later (November 29, 2006), a postcard reminder was mailed to the non-respondents reminding them of the survey and asking them to participate. The postcard (see Appendix H) was patterned somewhat after Mayer's reminder postcard (1959).

Almost one month after the initial mailing (December 13, 2006), a reminder letter was mailed to those people who had not returned the questionnaire. This reminder letter (see Appendix I) was almost identical to the first letter. This mailing included a copy of the questionnaire and a stamped and addressed return envelope.

Two months after the initial mailing, another reminder letter (see Appendix J) was mailed to those people who had not yet returned the questionnaire. Enclosed in the envelope that was mailed were the letter (see Appendix J), the questionnaire (see Appendix F), an uncirculated two-dollar bill, an addressed and stamped return envelope, and a postcard note (see Appendix K) offering more money and appreciation. The respondents were not given the opportunity to decline to accept the monetary incentive—Curlin (personal communication, January 2, 2006) reports that this policy worked for his study.

The respondents' questionnaires were self-administered and remain confidential and anonymous. In order to prevent successive mailings to people who had already



returned the questionnaire, a unique respondent code number was typed on the back of each questionnaire. If a respondent indicated on the questionnaire a willingness to participate in a follow-up interview, I personally contacted the respondent and conducted an interview. If the respondent initially expressed a willingness to be interviewed, but then later changed his mind or was for any reason unable or unwilling to participate further, then I immediately removed the respondent from the list of people to be interviewed. Participation was voluntary for the participants at every stage and could be ceased at any stage.

I am the only person who conducted the interviews (Appendices N-T). I interviewed the respondents via telephone with one exception—a respondent who wished to do it via email. In some cases, the telephone interviews were arranged via email. The respondents were telephoned and reminded about the survey and asked if they would mind if the interview was recorded in compliance with IRB policies that I stated to them. I then began recording the interview to be transcribed later.

For the interviews, I had developed questions partly based on what each respondent had written on his questionnaire, but I also engaged in improvisation based on where the respondent was leading the interview. This was true even to the extent that I was willing to dispose of all of my previously-prepared potential questions if it seemed they had little utility in getting genuine and useful responses from the interviewee. Also, the interviews were conducted in the chronological order in which they appear alphabetically in the appendices—and the respondents' statements in earlier interviews affected my questions and statements in later interviews. I attempted to be perceptive

and to use intuition in determining how to conduct each interview. I made it a priority to diplomatically end any interview as quickly as possible if I sensed through verbal or nonverbal cues that the interviewee was no longer interested in being interviewed or if the interviewee seemed to have nothing more of substance to offer.

The questionnaires were mailed, received, and recorded only by me, with no assistance or interference from anyone else. Likewise, the interviews were conducted and transcribed only by me.

### **Survey Strengths, Problems and Solutions**

It is sometimes difficult or impossible to know how much a researcher's bias might be a problem in a study. It has been shown that researchers' expectations and biases can and do influence the outcomes of studies (Rosenthal & Fode, 1963). Researchers have been shown to inadvertently and unintentionally communicate their expectations to the participants in various subtle ways, and then the participants may read the researchers' subtle signals and respond to the survey differently than they might otherwise have responded (Rosenthal, 1966). It has even been demonstrated that the experimental performance of supposedly relatively unintelligent animals such as rats can be influenced by this type of experimenter bias (Rosenthal & Fode, 1963). So if it is possible for a researcher's bias to influence a rat's behavior in an experiment, then it is certainly a problem to be aware of in more sensitive animals such as human beings. How can it be avoided, though? Not only did I (the current study's researcher) remain

conscious and vigilant against any such biases, but I also did everything possible to remain “faithful” to the previous incarnations of which this is a replication.

One problem that I was unconcerned about was “demand characteristics,” aspects of the study that reveal to the participants, in some manner, what the actual hypotheses are (Orne, 1962). I shared any and all information with the participants that they asked for—including the first three chapters of this dissertation and the letter of approval from the University of Texas IRB to me. The participants also might have been aware of the previous incarnations of the survey. Many of the respondents may have actually read the Larson Studies that were published in *Nature*. Also, some of the respondents may have been friends or associates of Mayer or the late Clarence James Leuba, both psychology scholars, the former being the author of the Mayer Study and the latter being the son of the author of the First and Second Leuba Studies. In either case, it would not be surprising if the respondents had some familiarity with one of the studies.

These things being true, it was doubtful that the respondents cared much about pleasing me or being “good subjects.” They were, after all, eminent scholars with little to lose from completing a questionnaire with integrity. However, there may have been a social desirability bias in this study: “Sometimes people respond to a survey question in a way that reflects not how they truly feel or what they truly believe, but how they think they should respond. That is, they attempt to create a positive picture of themselves—one that is socially desirable.” (Goodwin, 1998, p. 388)

Another potential problem is the “Don’t waste my time” issue: Each respondent had his own goals to pursue and might not have been inclined to spend even a single

minute participating in even the most important survey. A reluctance or refusal to participate in any survey—regardless of the content or brevity of the survey—could simply have been a manifestation of the legitimate expression, “What’s in it for me?” However, this was likely a minimal obstacle. The entire questionnaire was brief enough so that the respondents were likely to be able to easily complete it in a few minutes.

Overall, with adequate return rates, a well-designed questionnaire can be more efficient and less expensive than other kinds of surveys while still yielding valuable data (Goodwin, 1998).

### **Reliability and Validity**

As part of the larger First Leuba Study beyond the distinct part that focused on eminent psychologists, Leuba did two separate surveys of 500 random samples of the men listed in the 1910 edition of *American Men of Science*, using essentially the same questionnaire that he used for the eminent psychologists. The data provided by the First Leuba Study (pp. 222, 252) indicated that the reliability, the consistency and stability of the survey numbers, was high for this questionnaire.

Construct validity is the extent to which a higher-order construct is represented in a particular study. Leuba, in the following quote, provided solid evidence for the construct validity of the questionnaire:

In the present status of religion and of philosophy, there is only one fundamentally significant classification of the various conceptions of God. On the one side must be placed the conceptions that are consistent with the means of worship common to all the religions, original Buddhism and Comptism excepted; on the other, those that are not. Every book of worship at present in use implies a Being in direct affective and intellectual relation with his worshippers; a Being,

therefore, endowed with will, feeling, and intelligence. The surrender of that conception would mean either the disappearance or the radical transformation of practically all the religions known to history.

Who would recognize the Christian religion, either Protestant or Roman Catholic, were all traces of direct communication with the Divinity now indicated in its liturgies to be removed? The Christian God and the knowable First Cause of Spencer, or the impassible Absolute of most contemporary philosophers, are essentially different conceptions which can be used interchangeably neither in religion nor in philosophy....

The expression 'personal immortality' is usually understood to mean the continuation after death of the conscious individual and implies the continuation of the sense of one's identity. Any conception which does not include this sense of identity is not the one intended here. (1916, pp. 173-174)

Internal validity, on the other hand, is "the ability to infer that a causal relationship exists between two variables" (Johnson & Christensen, 2004, p. 230). It appeared that this survey would have internal validity if Leuba's prediction was correct. In other words, "If knowledge is, as it seems, a cause of the decline of the traditional beliefs, that decline will presumably continue as long as the increase in knowledge" (1934, p. 300). On the other hand, "the validity and reliability of qualitative data depend to a great extent on the... sensitivity and integrity of the researcher" (Patton, 1990, p. 11).

### **Analysis of the Data**

In order to decrease the likelihood of errors due to data entry in the computer, all of the questionnaire data were entered twice (separately and by different people) and then the two resulting files were compared. Inconsistencies were identified and errors were corrected against the original questionnaires. The interviews were transcribed and then read through again while listening to the recording to insure that they had been accurately transcribed.

A sophisticated statistical analysis of the questionnaire data was unnecessary and may have been counterproductive.

Remember that throughout the process in which you conceive, plan, execute, and write up a research, it is on your informed judgment as a scientist that you must rely, and this holds as much for the statistical aspects of the work as it does for all the others. This means that your informed judgment governs the setting of the parameters involved in the planning... and that informed judgment also governs the conclusions you will draw.... Gerd Gigerenzer showed how and why no single royal road of drawing conclusions from data is possible, and particularly not one that does not strongly depend on the substantive issues concerned—that is, on everything that went into the research besides the number crunching. An essential ingredient in the research process is the judgment of the scientist. He or she must decide by how much a theoretical proposition has been advanced by the data, just as he or she decided what to study, what data to get, and how to get it.... Some scientists, physicists for example, manage without the statistics, although to be sure not without the informed judgment. Indeed, some pretty good psychologists have managed without statistical inference: There come to mind Wundt, Kohler, Piaget, Lewin, Bartlett, Stevens, and if you'll permit me, Freud, among others. Indeed, Skinner (1957) thought of dedicating his book *Verbal Behavior* (and I quote) "to the statisticians and scientific methodologists with whose help this book would never have been completed" (p. 111). (Cohen, 1990, pp. 1310-1311)

Because this study had a relatively elegant design, the basic results were self-evident—at least with regard to “what happened”—and are presented in Chapter 4. However, the raw data, *all* of which are presented in the appendices, perhaps manifest within themselves the truest and most complete meanings without putatively sophisticated gobbledygook being thrust upon them or extracted from them by me. Nevertheless, in Chapter 5, I will propose interpretations that might be imputed on the data.

I coded and categorized into common themes various aspects from the interviews and from the comments written on the questionnaires. This generally happened after I

had finished collecting all the data, but I had also engaged in memoing during data collection and was constantly attempting to use participants' responses to improve successive interviews.

All the previous studies (First and Second Leuba, Mayer, and First and Second Larson) had included significant information about respondents' extra comments that went beyond answering the three main questions on the survey. For example, "Many of the scientists wrote letters stating their inability to express religious convictions by means of a check mark. Others said the questionnaire was too personal, and appeared irritated at being asked to consider the concept of God within any context." (Mayer, 1959, p. 94) One respondent wrote, "I am refraining from complying with your request because I believe that real harm is done in announcing to the world the opinions of scientists relative to religious matters" (Leuba, 1934, p. 293). In the current survey, extra comments were welcomed, as were interviews. The extra data were analyzed to find recurring themes and possibly develop new theories or new avenues for research.

## **Summary**

This chapter summarized the quantitative and qualitative methods used in this study, reviewed the research questions, discussed the way in which the survey was conducted, documented and analyzed, as well as the feasibility of the project and its potential strengths and problems.

## **CHAPTER FOUR: SURVEY RESULTS**

### **Introduction**

This chapter includes the questionnaire response rate, the timeline of events, information about demographics of the respondents, the questionnaire item responses, and the common or recurring themes in the questionnaires and interviews (with quotes from the respondents to support and illustrate the themes).

The most common sentiments expressed on the questionnaire were generally along the lines of these quotes: “I think deism (belief in Gods & spiritual afterlife) is a pernicious delusion” (01AA); “I don't believe it (immortality) is possible or meaningful” (02AB); “Religious beliefs are nonsense, and the sooner Homo sapiens moves on from these primitive beliefs, the better” (30BD); “I am an atheist and I experience no conflict or doubts about my lack of belief in God or the afterlife” (36BJ); and “Understanding the natural world does not, in my view, require any assumption about there being an omnipotent god. Nature is wonderful enough without resorting to superstition and magic. The idea of immortality may give comfort to some (or many) but it is supported only by faith. Our existence is subject to the laws of nature—in particular, neuroscience” (38BL).

### **Response Rate, Timeline, and Demographics**

The response rate for the questionnaire was slightly above 61.29% (38 out of the 62 members). Nine of the respondents volunteered for follow-up interviews. Of those 9, 6 were actually interviewed via telephone and 1 did an email interview. All interviewees agreed to have the interviews recorded.



The questionnaire (see Appendix F) was mailed with the first letter (Appendix E) on November 17, 2006. The reminder postcard (Appendix H) was mailed on November 28, 2006. The questionnaire was mailed with the second letter (Appendix I) on December 13, 2006. The questionnaire was mailed with the third letter (Appendix J), a two-dollar bill, and a postcard-size note (Appendix K) on January 17, 2007.

Each respondent who returned a completed questionnaire either received a confirmation letter (Appendix L) or was contacted at least once if they had indicated a willingness to be interviewed. Each respondent whose questionnaire was returned after January 17, 2006, was mailed a confirmation letter (Appendix L) and a check for \$20.00 (except for 04AD who explicitly stated, “Please do not send the \$20.”).

Scant demographic information is provided herein because the number of potential participants is relatively small, all of the potential participants have been identified by name, and I had promised confidentiality to them within that context. The average age of the NAS psychology members during 2006-2007 was in the mid- to late 70s, but the average age of the respondents is not disclosed. The overwhelming number of the 2006-2007 NAS psychology members were male, so it can be deduced that most of the respondents in this survey are male (even if all of the potential female respondents did respond). No information about respondents’ institutions or geographic locations is disclosed. The response data in Appendix M reveals when a questionnaire was received from a respondent, but no information regarding postmarks is disclosed.

All information sent to the potential respondents was coded with six-digit alphanumeric codes, but those codes were randomly changed to four-digit alphanumeric

codes for publication in this dissertation to maintain confidentiality for the respondents in case their assistants or family members opened their mail before giving it to them. Thus, each alphanumeric code representing an individual herein is different than the alphanumeric code that was used for that individual during data collection.

A few deletions and changes were made to the respondents' comments in order to obscure their identities. These deletions or changes are made explicit by the use of ellipses or brackets. No deletion or change went unacknowledged. An example of a change that was made can be found in line 898 of the interviews: I replaced the actual species of household pets that were mentioned by the respondent with "[household pets]" in order to obscure the respondent's identity without changing the meaning of what he said.

### **Item Responses**

The questionnaire item responses are shown in Table 1. The raw data can be found in Appendix M. Table 2 compares the responses from this study with responses from previous studies.

Table 1

*Participants' Responses to Questionnaire Statements #1-8*

	<b>Belief</b>	<b>Disbelief</b>	<b>Neither</b>
1. Concerning God			
	1	33	3
	2.6%	86.8%	7.9%
2. Concerning immortality			
	0	35	3
	0%	92.1%	7.9%

3. Desiring immortality			
	<b>Intense</b>	<b>Moderate</b>	<b>Not at all</b>
	4	6	23
	10.5%	15.8%	60.5%

	<b>Strongly Agree</b>	<b>Somewhat Agree</b>	<b>Neither</b>	<b>Somewhat Disagree</b>	<b>Strongly Disagree</b>	<b>Total</b>
4. The idea of God seems quite unnecessary.						
	21	3	6	5	2	
	55.3%	7.9%	15.8%	13.2%	5.3%	97.4%
5. Although I do not believe in God, I am open-minded about the mysteries of life.						
	13	12	7	2	3	
	34.2%	31.6%	18.4%	5.3%	7.9%	97.4%
6. Part of me exists independently of my physical person.						
	1	3	1	3	30	
	2.6%	7.9%	2.6%	7.9%	78.9%	100%
7. I engage in contemplative activities such as Yoga or meditation.						
	0	7	6	4	21	
	0%	18.4%	15.8%	10.5%	55.3%	100%
8. I have found a way to come to terms with my existence, or lack thereof.						
	14	13	7	2	2	
	36.8%	34.2%	18.4%	5.3%	5.3%	100%

Table 2

*Longitudinal Comparison of Beliefs From 1914-2007*

	1914	1933	1958	1958	2007
n=	38	45	25 <sup>1</sup>	17	38
Belief in God	13.2%	2% <sup>5</sup>	8%	6%	2.6% <sup>4</sup>
Disbelief in God	80% <sup>2</sup>	87%	76%	— <sup>3</sup>	86.8% <sup>4</sup>
No belief re: issue	6% <sup>2</sup>	11%	16%	— <sup>3</sup>	7.9% <sup>4</sup>
Belief in immortality	8.8%	2%	8%	6%	0%
Disbelief in immortality	63% <sup>2</sup>	79%	68%	— <sup>3</sup>	92.1%
No belief re: issue	28% <sup>2</sup>	19%	24%	— <sup>3</sup>	7.9%
Intense desire for immortality	— <sup>3</sup>	— <sup>3</sup>	8% <sup>4</sup>	— <sup>3</sup>	10.5% <sup>4</sup>
Moderate desire for immort.	— <sup>3</sup>	— <sup>3</sup>	20% <sup>4</sup>	— <sup>3</sup>	15.8% <sup>4</sup>
No desire for immortality	— <sup>3</sup>	— <sup>3</sup>	56% <sup>4</sup>	— <sup>3</sup>	60.5% <sup>4</sup>

1. In addition to providing limited specific information about the psychology members, Mayer (1959) published information about the 17 psychology respondents and 8 anthropology respondents combined together in this group of 25. In 1958, there were 23 members of psychology section of the NAS, and 12 members of the anthropology section. Seventeen psychology members responded; 8 anthropology members responded. The complete list of psychology members included F.A. Beach, E.G. Boring, Leonard Carmichael, Arnold Gesell, C.H. Graham, J.P. Guilford, H.F. Harlow, E.R. Hilgard, Heinrich Klüver, Wolfgang Köhler, K.S. Lashley, D.B. Lindsley, W.R. Miles, H.W. Nissen, W.B. Pillsbury, C.P. Richter, B.F. Skinner, K.W. Spence, S.S. Stevens, E.C. Tolman, Georg v. Békésy, E.G. Wever, and R.S. Woodworth; and the complete list of anthropology members included Clyde Kluckhohn, W.F. Albright, C.S. Coon, Emil W. Haury, A.V. Kidder, A.L. Kroeber, S.K. Lothrop, R.H. Lowie, H.L. Movius, Jr., H.L. Shapiro, Leslie Spier, and J.H. Steward (Proceedings of the National Academy of Sciences, 1957).
2. These numbers are approximations based on Leuba's charts (1916, p. 268).
3. Leuba and Mayer provided neither numbers nor approximations for these.
4. These numbers do not add up to 100%. Some respondents did not check the box next to any of the statements.
5. This number is stated by Leuba as 2% in his 1934 article (p. 296), but as 12% by Leuba in his 1950 book, "The Reformation of the Churches" (p. 47). It is also listed by Mayer (1959) as 12%, and by Brown (2003, p. 617) as 12%.

## **Belief in God**

In 1998, Leuba's questionnaire had been criticized for being too "ambiguous" and for its questions supposedly being designed "to ascertain belief not just in some sort of God, but a very specific kind of personal God" narrowly defined by Leuba in 1914 as "a God to whom one may pray in the expectation of receiving an answer" (Scott, 1998, p. 25).

This study addressed such criticisms by adding a few relevant statements and asking the respondents whether they agreed or disagreed. For example, the following statement was added: "The concept of God seems quite unnecessary." 55.3% of respondents "strongly agreed." 7.9% "somewhat agreed." Clearly, the majority of respondents not only expressed disbelief in the 1914 definition of God, but they found even the mere *concept* of God to be unnecessary.

In the margin next to this statement, respondent 04AD wrote, "It seems to be necessary for many others." 12AL wrote, "I personally do not believe in God, but believe it is important for Society as a whole to believe in God." A couple of others wrote similar comments, such as, "Evidently some people have a psychological need for the concept of god. I am uncertain as to whether this need can be fully addressed in other ways" (24AX). These respondents clearly had indicated that they didn't believe in God, but their comments suggest that they don't mind other people having faith—and that it might even be a good thing.

One respondent (36BJ) wrote next to the statement, "unnecessary to whom?"

The one respondent who indicated a belief in God (with the caveat "when

desperate”) also noted, “When you are helpless and in mortal danger, you will always cry out to God for help. Sometimes, when doing so, help comes!” (19AS) He indicated a willingness to engage in a follow-up interview to discuss his religious and spiritual beliefs further. However, the interview (Appendix S) ended very quickly. I reviewed the general focus of the survey as being about the respondent’s belief in God or immortality, and he politely cut me off by saying, “I’m sorry, I don’t have any beliefs that way, so you can just count me out of it.” That basically was the entire interview.

### **Supernatural: Spirituality, mind-body problem, soul, non-physical existence**

The theme of supernatural-ness is addressed here. The respondents were universally skeptical of supernatural events or entities, or anything beyond nature. The idea that there was natural “stuff” and supernatural “stuff” (a dualism, as 30BD calls it) did not seem to make sense to them personally. If there was any question about the respondents’ naturalistic tendencies, consider their responses to this statement on the questionnaire: “Part of me exists independently of my physical person.” 78.9% “strongly disagreed.” 7.9% “somewhat disagreed.”

30BD said, “I’m very much a determinist and a materialist” (lines 313-314). He called this kind of dualism “unacceptable in the sense that there’s absolutely no evidence for it” (lines 317-318). He continued: “I’m not a religious person at all, as I think I indicated in the questionnaire. I’m an atheist in sort of an outspoken way in the sense that I think so many of the world’s problems today are coming from religious biases and

prejudices and things that eventually will pass from human culture, but probably not for a long time” (lines 339-342).

28BB stated, “It's hard for me to make any sense of the separate soul” (line 475). But he acknowledged that “a lot of people do have strong feelings of mysteries, strangeness, holiness, and so on, in certain situations in their lives that make a great impression on them. And I have not myself had these kinds of mystical experiences, but I do believe the people who have had them” (lines 442-445). This illustrated his lack of belief or any experience with anything supernatural, but he allowed that others might have had such experiences.

20AT made a comment on his questionnaire that many psychologists who are grappling with the issue of consciousness would appreciate: “Question 6 is a tricky one—disagreeing with 6 doesn't entail disbelief in a spiritual side to humanity, any more than it entails disbelieving that we have minds.”

“If you're referring to the mind-body problem,” stated 37BK, “no one's ever solved that. Some scholars think they have, but I don't think they have. I'm not sure I know. We all experience. And that's a different sort of mind stuff than the physical world, we think. But is it really? I don't really know. And I don't know any way to find out” (Lines 43-46).

Indeed, both the “mind” and the “spirit” are quite intangible, hard to locate precisely, and seemingly impossible to measure with a ruler.

### **Spirituality: Desire for, opposition to, or neutrality with regard to it**

Some of the respondents had desired experience with spirituality, transcendence, or an inner light. Others opposed these things. And still others seemed neutral or indifferent about them, simply claiming that they had never experienced such things.

Says 28BB: “When I was young, I used to hope I would have such experiences. But I guess why I hoped is because I thought it would be very interesting and I would become wiser because of it, etc. But, in fact, I don't think I really did” (lines 629-635).

15AO said he “wouldn’t have been against having such an experience,” but transcendence and spirituality were simply not things he ever responded to (lines 1066-1071).

Two respondents mentioned Quakers when the idea of spirituality came up: 20AT stated that the questionnaire “didn't ask about belief in something like an ‘inner light’; [sic] I'm non-religious but if I were religious I'd be a Quaker, I think.” Likewise with 37BK, who said, “I've never been there [experienced a higher plane of existence] (Line 62)... I attended Quaker meetings as an undergraduate because I admired the Quakers a great deal. And I remember being excited at the beginnings of these hours of quiet... Everybody was telling me I would experience an inner light. Well, I got to liking the meditation a lot and certainly my mind would wander and I found that interesting and the sessions seemed to get shorter and shorter, but I never had any inner light. (Lines 68-72).

Another respondent who simply did not respond to spirituality was 27BA:

I was brought up by parents who were semi-active in a [protestant] church and who had me there every Sunday for the service and for the appropriate



level Sunday School. By the time I was an adolescent I was quietly (I am fairly shy) growing quite skeptical of the various things that they were attempting to drill into me, but I did not rebel until I went to college at age 17 and delved quite heavily on my own into a good deal of secular philosophy. These ideas seemed more plausible to me, namely that we know about ourselves, the world, and the universe by study and observation, not by religious fiat. And with this perspective, I simply accepted my existence and that of others as having occurred and that one day it will cease; that I will no longer be. I simply do not see any reason to think that my "soul" or consciousness will outlast me or that it existed before I was conceived. Clearly, that is an hypothesis that I no more know how to prove than a more religious person does his or her hypotheses. Nonetheless, it underlies my approach to the world. (lines 869-881)

### **Mysteries, uncertainties, ambivalences, paradoxes, unknowable things**

The respondents had a great deal to say (or write) about what they didn't know. In other words, there seemed to be a consensus that they didn't know *most* things. Some of them liked that; some of them seemed frustrated by it; and some simply seemed to take it in stride.

Said 37BK: "I certainly wish there were more (mysteries) than there probably are. I love the idea of the unexpected and the surprising. That's pretty typical in a scientist. I guess I'm fundamentally an agnostic. I believe there are things we cannot prove, and some of them are fascinating. There are a great many mysteries about the world and about the lives we lead that I don't believe we'll ever be able to prove. I don't have any tools to do it with, that's for sure. And so most of the time, I simply choose to live as if I understood more than I do. (Lines 7-13)... Basically I really do think most things are unknown. And I think it's why I like science—that with a set of rules, we can at least establish certain things, if you buy into the set of rules" (lines 80-82). In comments he

wrote on the questionnaire, he said, “I don't know how to prove or disprove the objective existence of value. I choose to live consistent with what I understand to be ‘the good.’”

30BD stated, “There's obviously vastly more that we don't know than what we do know, and I think particularly with regard to cosmology, the origin of life, what the future holds” (lines 286-288). Likewise, 27BA conceded that, “My answers are bound to be very superficial” (line 796) and he said there were an enormous number of scientific mysteries he didn't have the answers to, but was curious about—and then he listed many of them (lines 819-847).

28BB, speaking about mortality, said, “If you ask me, ‘Am I afraid to die?’ and I say, ‘No, let them come, I wave my sword, I am etc...’ That's a way of flattering oneself” (lines 537-546). 28BB was acknowledging, it seemed, that he didn't know what death meant exactly—and that maybe if he was honest with himself it really worried him. However, he continued later:

It turns out that for myself that I'm not in great difficulty about this point. I should be. This will interest you. I had a roommate in college whom I liked a lot, and he went off and served [in the military and in another profession.] We drifted apart, I haven't seen him for a long time, but I did sort of hear from him and also other friends... that maybe we should get in touch and each of us could share what we thought the meaning of life was. And I just didn't answer the letter. And I probably wouldn't answer it again. But it seemed to me that the exchange showed that, for my friend, and some of his other friends spent a lot of time thinking about the meaning of life, like the folks do in William James' *Variety of Religious Experience*. And one of the things about that book that rings true is that there is a whole lot of different kinds of religious experience. There are varieties. And one of those varieties is not to be so bothered by it. (lines 737-747)

Here, 28BB seemed to have expressed that he was not bothered by existential matters, but then on the other hand maybe he was. There was an ambivalence on his part: he wanted to both acknowledge the mystery and also not acknowledge it.

This last illustration of not knowing is depicted not by the content of what the respondent said, per se, as much as the way in which he said it. In the interview, I said to 29BC, “There was also a question on the questionnaire that stated, ‘I desire personal immortality,’ and you checked, ‘not at all.’ That wasn't an uncommon response. Uh, do you desire to be alive a year from now?

29BC replied, “Sure.”

I responded, “Yeah. But one question I have is, if you desire being alive a year from now... but you think immortality is not something you desire, where in between those two is a target?”

29BC immediately replied, “OK, immortality, I'd like immortality, sure” (lines 971-981).

This last brief dialogue could be an example of the respondent not knowing something—and also not knowing that he didn't know it. Perhaps he still does not know it.

### **Hard to know what immortality means**

Zero percent of the respondents indicated on the questionnaire that they believed in immortality. Nevertheless, more than 10% indicated that they desired it intensely. Several respondents were puzzled by the idea of immortality enough to spontaneously

comment on it. 21AU wrote, "How does one desire or not desire a state that does not exist and may not even make sense?" 37BK wrote, "I don't know enough about what 'personal immortality' would involve to have an opinion." Later, while being interviewed, he asked (apparently rhetorically), "Don't you think that immortality might get really boring?" (Line 22)

27BA apparently strayed from the general arena of religion, spirituality, and existence, and stated (next to the statement about desiring immortality), "I hope that some of my intellectual contributions will be useful after I die."

### **Defining the self, identity**

One of the statements on the questionnaire (#6) was, "Part of me exists independently of my physical person." Only approximately 10.5% of the respondents agreed with that statement. What does it mean to say "me" or "I"? How does one define oneself or another?

Respondent 30BD stated that a person is certainly not defined by their DNA: "I mean, that's not at all the case. I mean, no geneticist would want to claim that. (lines 304-305) On the other hand, 28BB stated, "I got tired of hearing social psychologists claim that 'the self' is nothing but a social construct. (line 463) He was sure that it was much more complicated than that (line 471), and he gave many ideas about the fact that there is an enduring self (lines 642-680).

15AO said, “I believe that human beings have an identity, yes, in some informal sense. If you next ask me what it means to have an identity, I will be *unable to say anything intelligible*” (lines 1049-1051) [emphasis added].

### **Reconciled with death/existence?**

Statement #8 on the questionnaire was, “I have found a way to come to terms with my existence, or lack thereof.” 71% of respondents agreed with the statement; only approximately 10.6% disagreed with the statement. Indeed, the general sentiment expressed by most of the respondents was consistent with what 36BJ said: “I am an atheist and I experience no conflict or doubts about my lack of belief in God or the afterlife.”

There were exceptions. Respondent 28BB, after I mentioned that some of the respondents represented themselves as being quite nonchalant about death or nonexistence, said, “I think you are right to suspect the answers you get are not entirely truthful. After all, if you ask me, ‘Am I afraid to die?’ and I say, ‘No, let them come, I wave my sword, I am... etc...’ That's a way of flattering oneself” (lines 537-546).

15AO, also, stated “I am unreconciled to death” (line 1041). It is notable that he used the preposition “to” rather than “with”—which made that expression of his sentiment more palpable and less passive.

**What is most important, special, or how meaning is found.**

The questionnaire did not specifically ask the respondents what was most important or special to them, or how they found meaning in their lives, so I inquired about these things during the follow-up interviews. The respondents had much to say about this, and there was a great deal of variety in the responses.

37BK expressed that doing good things for others, not hurting other people, raising his children to work hard and to respect others were important and good things. “Now, I can't prove any of that,” he said, “but I made a decision to choose to live as if I could” (lines 115-116).

Likewise, when 27BA was asked how his values were determined, said, “I do not really know” (line 917). However, he found all of the following to be special or most important to him: “To be honorable to the extent that I am wise enough to be, to be moral, to be of some service to others such as my university, and to try to understand aspects of the world as filtered through my mind. Of course one's life has many more mundane pleasures such as enjoying aspects of art — paintings, plays, music, some cinema —; gardening; over the years knowing several [household pets] and becoming aware of their huge individual differences; excellent food and wine; and sensual pleasures. And these too are special to me, even if my esthetic tastes are not as cultivated as some people's” (lines 894-901). He also said he had found meaning “through deep personal relationships and via an active intellectual life based on study, theory generation, and empirical studies” (lines 888-889).

Others were more concise and without hesitation said that what was most important to them was “seeking the truth” (30BD, line 343) or “social justice” (29BC, line 969).

28BB stated, “At the moment, I have a wonderful relationship with a [romantic] friend of mine, that I've had now for [a number of] years, and I would say that was the most important thing at the moment.... I have a number of grown children, and they're important to me too. But I have nothing unconventional here. I guess, twenty or thirty years ago, I might have said, ‘It's really important to me to make a contribution to psychology and become famous and the like.’ I don't really say that kind of stuff anymore” (lines 587-596).

### **Rationality**

The respondents tended to find religion and spirituality to be irrational, and that made them particularly unappealing. The respondents generally believed that they were rational people and that they valued being rational. Respondent 37BK, for example, stated outright, “I think I'm a rational person (line 130).... We have to deal with what is” (lines 236-237).

Likewise, 30BD stated, “The truth is to be found in as cool-headed an examination of reality as is possible. It's not always possible, but that's where good things come from, as opposed to bad things (lines 343-345).... I think the truth is, by definition, articulable. If it's not articulable, it's nonsense... it's nonsense” (lines 354-355).

On the other hand, 15AO said, “Well, most of human behavior is irrational, but there's a rational component” (lines 1056-1057). When I asked if 15AO was suggesting there was a balance between being rational and being irrational, he said, “Well, it's not a balance. There's nothing rational about, let us say, how you manage to breathe or send blood to your cells. Most parts of the brain have no contact with what we think of as the conscious mind. And all those parts are necessarily nonrational. And, of course, there are components of emotional life that are irrational as well.” (lines 1058-1063).

It remains unclear whether the respondents valued rationality for its own sake (intrinsically) or as a tool for achieving something else—or both.

### **Meditation, LSD, Club on the Head, Altered States**

On the questionnaire, statement #7 gave the respondents an opportunity to indicate some engagement in non-Western spiritual practices. Of the respondents, 18.4% indicated that they “somewhat agreed” that they engaged in contemplative activities such as Yoga or meditation. 04AD wrote next to the statement, “I do Tai Chi, for exercise.” Otherwise, the respondents did not (via voluntary comments on the questionnaire) express any enthusiasm or participation in Eastern spirituality or other altered states of consciousness; the same can be said of those respondents who participated in follow-up interviews.

37BK said, “I think there are a lot of things you can do to change personal consciousness—being hit with a club is one of them. But, you know, LSD and mind-altering drugs... I like what I've got well enough. I don't want to mess around with it, so I



think that's pretty silly. You know, there are mystics who fast and have altered experiences as a result of it. One could argue that it's all brain chemistry, but I don't think they can prove that either" (Lines 51-56).

30BD clearly stated that he believed finding something spiritual through meditation or "dropping acid" was nonsense: "I think the truth is, by definition, articulable. If it's not articulable, it's nonsense... it's nonsense" (lines 354-355).

## **Money**

As of the writing of this dissertation, I have no evidence that any of the respondents kept or spent any of the money that was sent to them. Appendix M shows that some of the respondents returned the money to me. 42BP and 52BZ both returned the two-dollar bills with notes declining to participate in the survey. 51BY returned the two-dollar bill and the questionnaire not completed. 04AD returned the two-dollar bill with the completed questionnaire and wrote, "I find it offensive to be sent money with this questionnaire. Please do not send the \$20." 25AY returned the \$20.00 check with a note saying the money was unnecessary, but requested a summary of the study findings when available. In a study of religion, it is not unreasonable to wonder whether or not a population perhaps worships money as some people apparently do. There are no particular data in this study that would strongly support that claim.

## **Summary**

This chapter discussed how and when the survey took place. It presented the specific results of the participants' responses to the questionnaire. It also revealed, by presenting examples, the themes that were revealed in the respondents' writings and interviews.

## **V. CONCLUSIONS**

### **Summary of the Main Findings: Answers to the Research Questions**

It is hard to imagine an elite group of scientists more inclined to rationalism and naturalism and less inclined to spirituality or religiosity than the population being surveyed in this project. The response rate was over 61%, and the results were clear-cut: Not one of the respondents expressed a belief in immortality, and only one person expressed a belief in God—and then only with this caveat: “when desperate.” Furthermore, that person, when approached in the follow-up interview (Appendix S) with regard to his belief in God and immortality, said, “I’m sorry, I don’t have any beliefs that way, so you can just count me out of it” and then politely, but abruptly, ended the interview.

The conclusion is that none—or very practically none—of eminent psychology scholars today believe in God and immortality. Thus, the percentage of eminent psychology scholars who believe in God or immortality has necessarily decreased since 1914.

However, this study does not suggest that our eminent psychology scholars are, or should be, claiming the much-caricatured mantle of sarcastic, curmudgeonly atheism. It cannot do that because the data do not support it: Yes, some of the respondents may have indicated that most of the survey questions were “absurd” or that “religious beliefs are nonsense, and the sooner Homo sapiens moves on from these primitive beliefs, the

better.” Whatever their opinions, most of the NAS psychology members participated in the survey and all of the participants were unfailingly polite and civil in their responses to the survey.

Furthermore, despite the very personal nature of the survey, the respondents’ candor seemed evident. Several expressed an intense desire for immortality despite believing that it wasn’t possible. One wrote, “When you are helpless and in mortal danger, you will always cry out to God for help.” Another said, “I attended Quaker meetings as an undergraduate because I admired the Quakers a great deal... but I never had any inner light.” Yet another conceded, “I wouldn’t have been against having [a spiritual or transcendental] experience, but I never did.”

Despite their apparent candor, a high response rate, and the opportunity to express alternative (or on-mainstream) religious or spiritual functioning or beliefs, the respondents generally seemed irreligious and non-spiritual even in alternative or Eastern manners. Thus, the follow-up interviews were generally used to seek what was valued by the respondents, what was special or most important to them, how they defined their identities, how they found meaning in life, and what their feelings about mortality were.

With regard to the questions on Leuba’s original questionnaire, the numbers certainly do not give any reasonable indication that belief in God or immortality has increased among this population during the last 93 years. As a matter of fact, of all the groups that have been surveyed using this questionnaire during the last 93 years, this is the *first* time that 0% of the respondents in a group expressed a belief in immortality.

The common or recurring themes in the survey included the following: little interest in Yoga, meditation, LSD, fasting, contemplative practices, or Eastern spiritual practices; a particular appreciation for rationality; a variety of feelings about death and non-existence ranging from contentment to frustration to ambivalence; a generally accepted belief that there is an enduring self or identity, but that it is hard to define; a variety of feelings about immortality, including not knowing what it means, having an intense desire for it, having some desire for it, having no desire for it, or being ambivalent about it; a variety of feelings about spirituality including openness to it, opposition to it, and neutrality with regard to it; no strong beliefs that there is a soul or spirit, but some open-mindedness that having a “mind” is no more provable than is having a “spirit;” general (but not total) agreement that there are natural mysteries, uncertainties, ambivalences, paradoxes, disagreements, and unknowable things, and that curiosity about these things is common or central to their experience as scientists; and generally more often the finding of meaning in life not in abstractions, but in tangible day-to-day concrete experiences.

In the questionnaire and then the follow-up interview with 29BC, when he was confronted with the question of whether or not he truly desired immortality (lines 973-981), he changed his mind. It seemed that perhaps that dialogue was an example of the respondent not knowing something—and also not knowing that he didn’t know it. Perhaps he still does not know it.

This may have been an example of Hofstadter’s (1998) statement that, “All great science... is motivated by a fascination with mystery, and by that I do not mean the

clearing-up of mysteries, as in puzzle-solving. I mean something more akin to the feelings of awe and strangeness that one has when *confronted with inconceivables* such as the vastness of the cosmos, the seemingly paradoxical constancy of the speed of light, the ethereality of the tiniest constituents of matter, or the shimmering between wave-nature and particle-nature exhibited by those ghostly items” (p.512). Perhaps the best way to understand the “religious” and “spiritual” characteristics of today’s eminent psychology scholars is to try to understand their awe and fascination, and how they grapple with the inconceivables, paradoxes, and ambivalences.

### **Limitations and Opportunities of the Current Study**

Perhaps the most substantial issue in this study is the question of how to deal with lies. Respondents can engage in slight disingenuousness, lack of candor, outright deliberate fraud, or self-deception. One respondent said that pursuing truth was one of the most important things to him (line 343), yet another conceded that perhaps he wasn’t telling the truth to me (lines 600-601). The latter of these two stated that he had no interest in discussing the meaning of life with old friends when they had invited him to recently—and yet he willingly spent more time than any of the other respondents being interviewed by me about the meaning of life and related matters. So did he want to discuss these meaning-of-life issues or did he not? This is a concrete example of ambivalence or self-deception.

Truth-telling—whether interpersonal or intrapersonal—is a complicated thing. As respondent 15AO stated, “most of human behavior is irrational” (line 1056). Zilboorg (1943) stated,

If this fear [of mortality] were as constantly conscious, we should be unable to function normally. It must be properly repressed to keep us living with any modicum of comfort. We know very well that to repress means more than to put away and to forget that which was put away and the place where we put it. It means also to maintain a constant psychological effort to keep the lid on and inwardly never relax our watchfulness. (p. 467)

What was I to do with a questionnaire returned by 26AZ, for example, in which the respondent marked that he “strongly disagreed” with all five of the statements #4 through #8? Not only was 26AZ the only respondent to “strongly disagree” with all five of the statements, but I wonder whether it is counterintuitive or disingenuous for a person with integrity to be able to strongly disagree with all five of those statements. Were his responses valid? Did the respondent merely want the money that had been offered? Did he just want me to stop sending him mail? Perhaps his responses were valid. Maybe he was merely feeling particularly disagreeable that day when he received the questionnaire in the mail, and so his responses were honest.

Research workers who deal with interview data frequently are asked the question: ‘How do you know if the informant is telling the truth?’ If they are experienced research workers, they frequently push aside the question as one asked only by those unsophisticated in the ways of research. But the persistence with which it comes up suggests that we take it seriously and try to formulate it in respectable terms.

Those who ask the question seem bothered by the insight that people sometimes say things for public consumption that they would not say in private. And sometimes they behave in ways that seem to contradict or cast serious doubt on what they profess in open conversation. So the problem arises: Can you tell what a person *really* believes on the

basis of a few questions put to him in an interview? Is this not a legitimate question?

The answer is, ‘No’ —not as stated. It assumes that there is invariably some basic underlying attitude or opinion that a person is firmly committed to, i.e., his *real* belief. And it implies that if we can just develop shrewd enough interviewing techniques, we can make him ‘spill the beans’ and reveal what this basic attitude really is.

To begin with, we must constantly bear in mind that the statements an informant makes to an interviewer can vary from purely *subjective* statements (‘I feel terribly depressed after the accident’) to almost completely *objective* statements (‘The Buick swerved across the road into the other lane and hit the Ford head on’). Many statements, of course, fall somewhere in between: ‘The driver of the Ford was driving badly because he had been drinking;’ or ‘It was the Ford driver’s fault because he was drunk.’

In evaluating informants’ statements we do try to distinguish the subjective and objective components. But no matter how objective an informant seems to be, the research point of view is: *The informant’s statement represents merely the perception of the informant, filtered and modified by his cognitive and emotional reactions and reported through his personal verbal usages.* Thus we acknowledge initially that we are getting merely the informant’s picture of the world as he sees it. And we are getting it only as he is willing to pass it on to us in *this particular interview situation*. Under other circumstances the moves he reveals to us may be much different. (Dean & Whyte, 1958, p.34)

Stated another way, “if someone is ‘not being completely candid,’ then that is her/his truth on that particular day in that particular situation” (Jones, K, personal communication, February 4, 2007). So respondent 26AZ’s responses were his truth as expressed on that day in his particular situation. This should come as no surprise to those familiar with Goffman’s (1959) claims that few of us are ever “completely” candid.

Even I, the principle investigator in this study, have scrutinized my behavior during the interviews as perhaps being too disingenuous, too accommodating, too much like a chameleon or a Zelig. On the one hand, I seemed to agree with 37BK that “maybe there’s just the tension in life where we’d like to live a little longer, but we don’t want to



live forever” (lines 31-33). On the other hand, in interviewing 28BB, I stated, “But it does puzzle me sometimes when I hear a scientific psychologist say, ‘No, I don’t want to live forever; that would be silly.’ And on the other hand, they do want to live a little bit longer than they are alive right now” (lines 516-518).

Consider, too, my seemingly agreeing with 37BK that being alive for three trillion years would probably get quite boring. Actually, though, I can imagine some kind of cosmic asymptote of pure happiness, curiosity, joy, or contentment to which a person could, in theory, always (into eternity) be getting closer and closer.

I also wonder about my treatment of 29BC (lines 971-981). Was it unfair to put the respondent on the spot and ask him when would be the ideal time for him to die? It may very well have caught the respondent quite off guard or made him feel vulnerable or attacked. On the other hand, he had volunteered for a follow-up interview. And, more importantly, I was asking a legitimate question in the pursuit of truth. Of the two people engaged in that conversation, only my identity will ever be known—no embarrassment or vulnerability related to his interaction will ever befall him.

Bleek (1987, p.314) said, “Survey research cannot handle delicate issues.... That an informant’s unwillingness to cooperate increases as the topic becomes more intimate and embarrassing goes without saying.... Interviewers who ask personal questions about delicate topics, sometimes with more sense of duty than common sense, force polite informants into lying ones.”

Bleek was wrong. The current study has provided evidence that survey research *can* handle delicate issues. However, this is probably more ably accomplished by a

researcher who is willing to be transparent, authentic, respectful, trustworthy, and courageous.

The observation of the subject by the observer is complemented by the counter-observation of the observer by the subject.

This insight forces us to abandon—at least in a naive sense—the notion that the basic operation in behavioral science is the observation of a subject by an observer. We must substitute it for the notion that it is the analysis of the interaction between the two, in a situation where both are at once observers to themselves and subjects to the other. However, even in that case, one must clarify logically the nature and locus of the partition between the two, because experimental attempts to create such partitions always miscarry, being both logically and practically self-defeating. (Devereux, 1967, p. )

The interviewee-interviewer relationship can be a peculiar one—with the alternating between the approach and avoidance, the parry and thrust, the suspicion and the trust. I felt that the interview with 28BB was one of the more productive, in part because the respondent felt free to state outright that he could and might be lying to me. However, that freedom is also part of what allowed him to reveal that he may have been flattering himself when he said he was not afraid to die (lines 545-546).

It is not so simple to identify which of these factors are limitations and which are opportunities for greater discovery. If a networked computer had been used to conduct that particular interview with 28BB (in order to “protect” the respondent via a double-blind design), it likely would have been a far less productive interview.

## Implications and Directions for Further Research

### *The perfectly rational human?*

If, indeed, the individual does exist, then its desire to survive, reproduce, and have an identity apparently is so great that even the most rational (in terms of valuing rationality and being most able to engage in it) group of people have been shown in this study to have a lapse in their rationality—even in a formal survey from a research university!

I would expect to continue to see this lapse (e.g., fraud, self-deception) in many scientific endeavors. Even in the world's most elite group of rational thinkers (about human beliefs and behavior), one person escaped this pure rationality at least momentarily. *That* is the story here—that there was a *breach* in the rationality—not that practically none of the respondents believed in God or immortality. A tightly-coupled (not loosely-coupled) brain/mind—like a tightly-coupled nuclear reactor, as described by Scott (2002) —could be endangered by these lapses in rationality (or could endanger others).

Bloustein (1972) states that, “the university is the place where reason resides. It is, in fact, the institutionalization of reason.... The university exists to reason; reason is the very purpose of its being” (pp. 4-5). That said, the implication of *this* study is that there *will* be lapses in the reasoning. Even amongst the most elite group of rational thinkers, there was one who at least temporarily betrayed his rationality. Perhaps it would behoove university administrators to step back and look for places within their

institutions where entities are too-tightly coupled, and to allow for the institutionalization of greater irrationality.

*A grand unifying theory of psychology without a grand unifying theory of physics?*

The respondent 30BD, for example, stated clearly that he had a materialist and naturalist predilection. For such people, it does seem that studying psychology is pointless without studying physics, chemistry, and cosmology. Such sentiments lend credence to the increasing moves in the direction of interdisciplinary work.

*Formula for the most palatable time to die*

Is there a cognitive-emotional-biological formula for the most palatable time to die (MPTD)? Kübler-Ross (1969) found that terminally-ill patients generally got to a point at which they accepted death. A person who commits suicide—whether in solitude or by flying a plane into the World Trade Center—has, at least *tentatively*, apparently found his MPTD. For many people, the MPTD is “never.” The MPTD can apparently be influenced as was evidenced by Jim Jones getting his followers to drink poisoned Kool-Aid, or by licensed professional counselors preventing or delaying the suicides of their clients. Perhaps another environmental influence that can affect a person’s MPTD is the knowledge that his child will grow up or has grown up and achieved “success.”

What is the formula? This is a legitimate question with which the respondents fumbled around. Most obviously, respondent 29BC stated that he had no desire for immortality. Then, he flip-flopped and stated that he did desire immortality (line 981).

Understanding the formula for a person's, or a population's, MPTD could be useful to the Department of Defense in manipulating other nation's citizens, for the most efficient planning within the hospice care industry, or for adjusters who do actuarial work.

*Sharing raw data and errata, and not encouraging extraneous information*

Numerous times in this paper, evidence has been presented of data that are incorrect, inaccurate, misleading, or disingenuous. Even within the same articles, there are inconsistencies, sometimes outright sloppiness, and a casual refusal to share raw data. Leuba contradicts himself between his 1934 and 1950 works, with regard to some very basic numbers. Leuba (1916) provides data in multiple formats scattered around the book in footnotes and tables and in the main text, so that it is extremely difficult to interpret his numbers. Approximately half of the numbers in Larson and Witham's Second Study were incorrect and no errata were ever published for them. Although Eklund publicized her findings with regard to the religious beliefs of academics (Glenn, 2005a; Glenn 2005b), she has not shared the specific survey questions she used (Eklund, personal communication, 2006). Mayer (1959) grouped psychologists and anthropologists together, making it harder to understand the psychologists' reported beliefs since only limited information about them specifically was provided.

Hawkins (1999) showed that errors in published scientific research had been increasing at an exponential rate during the last approximately 40 years. He indicated that the problem was continuing and getting even more severe. Particularly with regard

to psychological research, the journal *Nature* has recently called for psychologists to be less reluctant to share their raw data (“A fair share,” 2006). Wicherts (2006) made clear just how severe the problem was when he demonstrated the researchers’ hypocrisy and the poor availability of raw data. In his study, he found that the vast majority of authors of research articles published in prominent psychology journals declined to share their data with him when he asked for it—despite the authors’ prior signed agreements to share the data.

In addition to these problems are policies by journals such as *Nature* (“Formatting guide,” 2007) that strongly encourage inclusion of “display items” (e.g., tables, photos, charts) with articles. There doesn’t seem to be this forceful request from American Psychological Association journals or Association of Psychological Sciences journals. The policy may make the pages of the journal look more aesthetically pleasing, but unfortunately it also forces authors to come up with “display items” that might be irrelevant, useless, or counterintuitive. It’s entirely plausible, too, that editors might create their own “display items” that do not accurately show authentic or true information about the authors’ articles. For example, in the first Larson Study, a picture of a cross was included using halftones behind the text of the article, suggesting that Christians were the only religion that believed in God or immortality—provoking a letter to the editor (Baker, 1997). This was apparently not Larson or Witham’s fault. In Larson’s Second Study, the vast majority of the incorrect numbers were in the table; one must wonder if it was the editors who scrambled to put together a table to include—the article

was otherwise far more coherent and meaningful without the table with all its incorrect numbers.

### *The relationship between religion and science*

The fact that one respondent did express a qualified belief in God will inevitably be interpreted in different ways by either school (or all schools) in a manner beneficial to its own interpretation/worldview. Religious people may say that this is evidence that God is so powerful that He is keeping His foot in the door of even the most profanely rational communities. Scientists, on the other hand, may blame the lack of uniformity on a confounding variable, a God module in the brain, God gene, or perhaps a momentary misunderstanding. This is further evidence that God-belief tends to seep or to pry into even the most rational people's minds.

Respondent 19AS was one of the more remarkable respondents in that he expressed a qualified belief in God on the questionnaire and indicated a willingness to discuss his religious and spiritual beliefs further in an interview. The brief interview (Appendix S), however, amounted to not much more than 19AS issuing a "non-denial denial" about religious belief (but certainly without stating 100% outright disbelief in God). It seemed that he was attempting to believe in God and simultaneously to be a scientist, but that he was frustrated by the effort to reconcile the data with his desires. This was not an average person, but an eminent scholar recognized in many ways for his great abilities.

What would the average man do with a full consciousness of absurdity? He has fashioned his character for the precise purpose of putting it between himself and the facts of life; it is his special *tour-de-force* that allows him to ignore incongruities, to nourish himself on impossibilities, to thrive on blindness. He accomplishes thereby a peculiarly human victory: the ability to be smug about terror. Sartre has called man a 'useless passion' because he is so hopelessly bungled, so deluded about his true condition.... Man uses his ideas for the defense of his existence, to frighten away reality. This is a serious game, the defense of one's existence—how take it away from people and leave them joyous? (Becker, 1973, p.59)

On the relationship between religion and science, Stark (1963) wrote the following:

The traditional argument that religion and science are incompatible perspectives is based on their contradictory evaluations of the authority of human reason. Religion, because of its ultimate commitment to a non-empirical system, must take the position that man's reason is subordinate to faith as a means to truth. From this view, reason is at best unreliable, and at worst, sinful pride. Science, on the other hand, defines truth as that which may be demonstrated either logically or empirically, and thus opts for the supremacy of reason. A middle-of-the-road attempt to resolve this conflict has been to argue that religious and scientific truths are different in *kind*, and hence accessible to different modes of knowing and subject to different criteria of validity. But many modern philosophers have been loath to grant religion such a special dispensation from the canons of logic and evidence. Indeed, such separation of truth into truths has recently been branded as 'anti-intellectualism' by Morton White. Thus it appears that scientific scholars are as unwilling to admit religious modes of knowing as religionists are to submit their theology to scientific standards, and a crucial basis for conflict seems to remain. (p. 4)

Those words were written almost 45 years ago. More recently, Brown (2003, p.614) quoted a passage from page 239 of Leuba's 1916 book:

Detailed acquaintance with the orderliness of physical nature dispossessed God of that realm. Will not familiarity with mental and social laws dispossess him of the psychic world also?... For the psychologist the mental life is as completely within the realm of law as the physical; therefore, if the existence of law is a bar to God's action, he is excluded



from intervening in the psychical life of man as well as in the physical universe.

In reaction to Leuba's ideas, Brown (2003) wrote that "however much or little God may be seen as intervening in the physical world, it has been maintained with near unanimity that God can affect the mind or heart and that humans have free will in responding to such divine action" (p. 614). Brown made this claim about "near unanimity" without citing so much as a single reference—although he used many other references in that article. It seems that it is just this kind lack of logic or reasoning that puts off the eminent psychologists. Stark's assessment of the situation seems correct in that the eminent psychologists seem befuddled by Brown's illogic.

Generally speaking, the respondents in this study communicated beliefs that would not be consistent with Gould's (1997) idea of "nonoverlapping magisteria" between the natural and the supernatural. The reason the respondents were not comfortable with such an idea is that they didn't even believe in the existence of anything supernatural to begin with, so whether or not it might overlap somehow with the natural world and natural laws seems to them to be nonsensical.

#### *Substantial nonverbal differences between religious people and scientists?*

Is it possible that the only difference between scientists and religious people is verbal? Scientists call existence "nature;" religious people call it "creation." Scientists go to university commencements and baccalaureate ceremonies that seem very much like church services. Respondent 30BD said, "I don't think anybody takes their academic robes as seriously as people would take their religious robes" (lines 408-409); however, is

that hypothesis testable? Scientists are rational and irrational; religious people are rational and irrational. Scientists and religious people are arguably similar or practically identical in nonverbal communication: Both live next-door to each other, eat similar food, perform various necessary bodily functions, value their friends, lovers, and children, want good things to happen in the world, and value social justice. When the interviewees in this project were asked what was special or most important to them, they described interests and pursuits that seem common among the most religious people in our society.

### *The “two cultures” of psychology*

As described in Chapter Two, there are (at least) “two cultures” of psychology. These have been described in many different ways. It would seem that the cultures are not evenly represented in the psychology section of the NAS. Respondent 30BD even stated, “I suspect you’ll get a softer, more spiritual set of answers from psychologists than if you asked biologists or certainly physicists or chemists” (lines 379-381). If the clinical, “romantic,” or post-positivistic psychologists, for example, were better represented in the NAS, then the responses in this survey would likely have been different. These respondents certainly do not represent all psychologists.

It would be useful to elucidate the “two cultures” of psychology further. How do they relate? How do they interact? Where do they overlap? Part of the operationalization in this study included identifying “eminent psychologists” as the

psychology members in the NAS. Perhaps a future study could define eminent psychologists in a different way.

### *Individual human existence*

I suspect future generations of NAS psychology members might be more forthcoming with regard to individual human existence. They might be more inclined to admit, as some psychologists already have, that the individual human doesn't exist (Blackmore, 2006).

30BD referred to Richard Dawkins with regard to religion, but not with regard to the least common denominator of living things—the essence of the human individual—which is something Dawkins (1976) has commented on and would be relevant to the question of the existence of the human individual. Although 30BD did not make that connection, he did make it clear that he was a materialist and a determinist (lines 313-314) and that he found any kind of dualism between the mind and body, or mind and soul, to be “unacceptable” (lines 317-318). He stated that he had thought hard about these issues (line 311), and he expressed certainty (lines 304-305) that the human being is not just its DNA. However, he did not offer a definition for the human individual.

One respondent (15AO) said he thought the individual existed and had some kind of informal identity, but he conceded, “If you... ask me what it means to have an identity, I will be unable to say anything intelligible” (lines 1049-1051). Another respondent (29BC) stated, “I don't think I have a view on it” (line 996) with regard to the existence

of the individual. These comments seem odd, given that the field of psychology rests on the presumption that the individual human being exists.

How can scientists study something they can't define—especially if they can't define it in a precise and accurate manner? How can an entity be said to have religious or spiritual beliefs if that entity does not exist or if its essence is in question? How can we define the individual in light of the fact that most of the cells in its body have DNA different than its own, that hundreds of different species live within the person and keep it alive, that monozygotic twins, triplets, and quadruplets are considered to be distinct persons, that suprachiasmatic nuclei can be transplanted, that mirror neurons exist, that phantom limbs seem to exist, or that a mother often feels that her child is part of her?

This is a critical issue that will deserve more attention.

## **Summary**

This chapter summarized the findings of this study, the answers it provided to the research questions, the limitations of the study, and the opportunities presented by the manner in which the study was conducted. It also discussed avenues for further research or action.

Appendix A: Questionnaire used in First Leuba Study

A. CONCERNING THE BELIEF IN GOD.

1. I believe in a God to whom one may pray in the expectation of receiving an answer. *By "answer," I mean more than the subjective, psychological effect of prayer.....*
2. I do not believe in a God as defined above.....
3. I have no definite belief regarding this question..

B. CONCERNING THE BELIEF IN PERSONAL IMMORTALITY, I. E., THE BELIEF IN CONTINUATION OF THE PERSON AFTER DEATH IN ANOTHER WORLD.

1. I believe in { personal Immortality for all men...  
conditional Immortality, i. e., Im-  
mortality for those who have  
reached a certain state of develop-  
ment.
2. I believe neither in conditional nor in uncondi-  
tional Immortality of the person in another  
world. ....
3. I have no definite belief regarding this question..
4. I desire personal immortality { intensely.....  
moderately.....  
not at all.....

**Appendix B:**  
**Questionnaire used in Mayer Study**

Make a check to the right of each statement true for you.

29. Concerning the belief in God:

- a. I believe in a God to whom one may pray in the expectation of receiving an answer. *By "answer," I mean more than the subjective, psychological effect of prayer.* .....
- b. I do not believe in a God as defined above. ....
- c. I have no definite belief regarding this question. ....

40. Concerning the belief in personal immortality, i.e., the belief in continuation of a person after death in another world:

- a. I believe in { personal immortality for all men. ....  
conditional immortality, i.e., immortality for those who  
have reached a certain state of development. ....
- b. I believe neither in conditional nor in unconditional immortality of the person in another world. ....
- c. I have no definite belief regarding this question. ....
- d. I desire personal immortality { intensely .....  
moderately .....  
not at all .....



**Appendix C:**  
**Larson and Witham's depiction of how Leuba phrased his 1916 questionnaire**

**A STATISTICAL ENQUIRY**

Conflicting statements are confidently made regarding (whether scientists hold a) belief in God and in personal immortality. Nevertheless, sufficient data are not extant to support any such supposition.

*The accompanying questions* are sent to 1000 persons taken by chance from those listed in "American Men (and Women) of Science", in the hope of securing statistics valid for this group. The condition of success is that all those addressed respond. No satisfactorily definite conclusions could be drawn if many of those addressed refused or neglected to answer.

It will take you only a few seconds to make a mark by every statement true for you. Please do it, if at all possible, on receipt of this paper and return it in the enclosed stamped envelope.

**A. CONCERNING THE BELIEF IN GOD.**

.....1. I believe in a God in intellectual and affective communication with humankind, i.e. a God to whom one may pray in expectation of receiving an answer. By "answer" I mean more than the subjective, psychological effect of prayer.

.....2. I do not believe in a God as defined above.

.....3. I have no definite belief regarding this question.

**B. CONCERNING THE BELIEF IN PERSONAL IMMORTALITY,**

*i.e. the belief in continuation of the person after death in another world.*

1. I believe in:

a. personal immortality for all people

b. conditional immortality, i.e. for those who have reached a certain state of development.

2. I believe neither in conditional or unconditional immortality of the person.

3. I have no definite belief regarding this question.

4. Although I cannot believe in personal immortality, I desire it:

a. intensely

b. moderately

c. not at all

## **Appendix D**

Current NAS membership list for psychology section retrieved on November 18, 2006 from <http://www.nasonline.org>

Edward Adelson  
Massachusetts Institute of Technology

John Anderson  
Carnegie Mellon University

Richard Atkinson  
University of California, San Diego

Linda Bartoshuk  
Yale University

Gordon Bower  
Stanford University

Susan Carey  
Harvard University

A. Noam Chomsky  
Massachusetts Institute of Technology

William Estes  
Indiana University

John Flavell  
Stanford University

Robert Galambos  
University of California, San Diego

Charles Gallistel  
Rutgers, The State University of New Jersey,  
New Brunswick

Rochel Gelman  
Rutgers, The State University of New Jersey,  
New Brunswick

Lila Gleitman  
University of Pennsylvania

Frances Graham  
University of Delaware

Norma Graham

Columbia University

David Green  
University of Florida

Charles Gross  
Princeton University

Morris Halle  
Massachusetts Institute of Technology

Richard Held  
Massachusetts Institute of Technology

Ira Hirsh  
Washington University

Julian Hochberg  
Columbia University

Leo Hurvich  
University of Pennsylvania

Jon Kaas  
Vanderbilt University

Daniel Kahneman  
Princeton University

Nancy Kanwisher  
Massachusetts Institute of Technology

William Labov  
University of Pennsylvania

Gardner Lindzey  
Center for Advanced Study in the Behavioral  
Sciences

Elizabeth Loftus  
University of California, Irvine

R. Duncan Luce  
University of California, Irvine

Eleanor Maccoby  
Stanford University

Peter Marler  
University of California, Davis



James McClelland  
Carnegie Mellon University

James McGaugh  
University of California, Irvine

Douglas Medin  
Northwestern University

George Miller  
Princeton University

Walter Mischel  
Columbia University

Mortimer Mishkin  
National Institutes of Health

Ulric Neisser  
Cornell University

Elissa Newport  
University of Rochester

Richard Nisbett  
University of Michigan

Barbara Partee  
University of Massachusetts at Amherst

Michael Posner  
University of Oregon

Dale Purves  
Duke University

Robert Rescorla  
University of Pennsylvania

Mark Rosenzweig  
University of California, Berkeley

David Rumelhart  
Stanford University

Roger Shepard

Stanford University

Richard Shiffrin  
Indiana University

Edward Smith  
Columbia University

Elizabeth Spelke  
Harvard University

George Sperling  
University of California, Irvine

Claude Steele  
Stanford University

Saul Sternberg  
University of Pennsylvania

Patrick Suppes  
Stanford University

John Swets  
BBN Corporation

Philip Teitelbaum  
University of Florida

Anne Treisman  
Princeton University

Leslie Ungerleider  
National Institutes of Health

Allan Wagner  
Yale University

Brian Wandell  
Stanford University

Lawrence Weiskrantz  
University of Oxford

Jozef Zwislocki  
Syracuse University

## Appendix E: Cover Letter—Text and Photocopy

November 14, 2006

Dr. Eminent Psychologist  
State University  
New York, NY 10016

Dear Dr. Scientist:

I respectfully request your participation in a survey of eminent psychologists' religious and spiritual beliefs. This study replicates a survey initially administered ninety-two years ago by Dr. James H. Leuba of Bryn Mawr College's psychology department. His study revealed that members of different scientific disciplines held strikingly different attitudes about religion. Although his study has been replicated several times since then, none of the replications since 1958 have included psychologists.

The purpose of this study is twofold: to gauge the extent to which eminent psychologists' beliefs about God and immortality may have changed during the last ninety-two years, and to begin to understand the characteristics of the spiritual or religious beliefs of contemporary eminent psychologists. To these ends, I am using Dr. Leuba's original questionnaire as well as a brief, additional qualitative component.

The enclosed one-page questionnaire is being sent to the sixty-two members of the National Academy of Sciences in the psychology section. I hope you will complete the questionnaire and return it. Your participation will be invaluable. Each respondent will receive a completed version of the study.

Each questionnaire is coded only so that I will be able to know whom to contact for unreturned questionnaires. Your responses to the questionnaire will be kept completely confidential and will not be revealed to anyone. I will take particular care to obscure individuals' information.

If you have any questions, please feel free to contact me via email ([pappas@ccwf.cc.utexas.edu](mailto:pappas@ccwf.cc.utexas.edu)) or via telephone (512-xxx-xxxx).

Sincerely,

Matthew W. Pappas  
Doctoral Candidate  
Department of Educational Administration  
The University of Texas at Austin

- P.S.
- The risk associated with this study is no greater than everyday life.
  - There are no benefits for participation in this study.
  - The enclosed questionnaire can be completed within a few minutes.
  - This study is titled, "The belief in God and immortality: A survey of eminent psychology scholars."



COLLEGE OF EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN

Department of Educational Administration • 1 University Station D5400 • Austin, Texas 78712-0374  
(512) 471-7551 • FAX (512) 471-5975

November 16, 2006

Professor Matthew Pappas  
Psychology Department  
1020 Grove Blvd  
Austin, TX 78741

Dear Dr. Pappas:

I respectfully request your participation in a survey of eminent psychologists' religious and spiritual beliefs. This study replicates a survey initially administered ninety-two years ago by Dr. James H. Leuba of Bryn Mawr College's psychology department. His study revealed that members of different scientific disciplines held strikingly different attitudes about religion. Although his study has been replicated several times since then, none of the replications since 1958 have included psychologists.

The purpose of this study is twofold: to gauge the extent to which eminent psychologists' beliefs about God and immortality may have changed during the last ninety-two years, and to begin to understand the characteristics of the spiritual or religious beliefs of contemporary eminent psychologists. To these ends, I am using Dr. Leuba's original questionnaire as well as a brief, additional qualitative component.

The enclosed one-page questionnaire is being sent to the sixty-two members of the National Academy of Sciences in the psychology section. I hope you will complete the questionnaire and return it. Your participation will be invaluable. Each respondent will receive a completed version of the study.

Each questionnaire is coded only so that I will be able to know whom to contact for unreturned questionnaires. Your responses to the questionnaire will be kept completely confidential and will not be revealed to anyone. I will take particular care to obscure individuals' information.

If you have any questions, please feel free to contact me via email ([pappas@ccwf.cc.utexas.edu](mailto:pappas@ccwf.cc.utexas.edu)) or via telephone (512-██████).

Sincerely,

A handwritten signature in dark ink, appearing to read "Matthew W. Pappas".

Matthew W. Pappas  
Doctoral Candidate  
Department of Educational Administration  
The University of Texas at Austin

P.S. •The risk associated with this study is no greater than everyday life.

- There are no benefits for participation in this study.
- The enclosed questionnaire can be completed within a few minutes.
- This study is titled, "The belief in God and immortality: A survey of eminent psychology scholars."

## Appendix F: THE QUESTIONNAIRE

Make a check to the right of each statement true for you.

1. Concerning the belief in God:
  - a. I believe in a God to whom one may pray in the expectation of receiving an answer. *By "answer," I mean more than the subjective, psychological effect of prayer.* ☐
  - b. I do not believe in God *as defined above* ☐
  - c. I have no definite belief regarding this question ☐
  
2. Concerning the belief in personal immortality, i.e., the belief in continuation of a person after death in another world:
  - a. I believe in {
 

personal immortality for all people. ☐  
 conditional immortality, i.e., immortality for those who have reached a certain state of development. ☐
  - b. I believe neither in conditional nor in unconditional immortality of the person in another world. ☐
  - c. I have no definite belief regarding this question. ☐
  
3. I desire personal immortality {
 

intensely ☐  
 moderately ☐  
 not at all ☐

Please indicate your degree of agreement or disagreement with the following statements by marking one:  
**Strongly Agree – Agree Somewhat – Neither Agree Nor Disagree – Somewhat Disagree – Strongly Disagree**

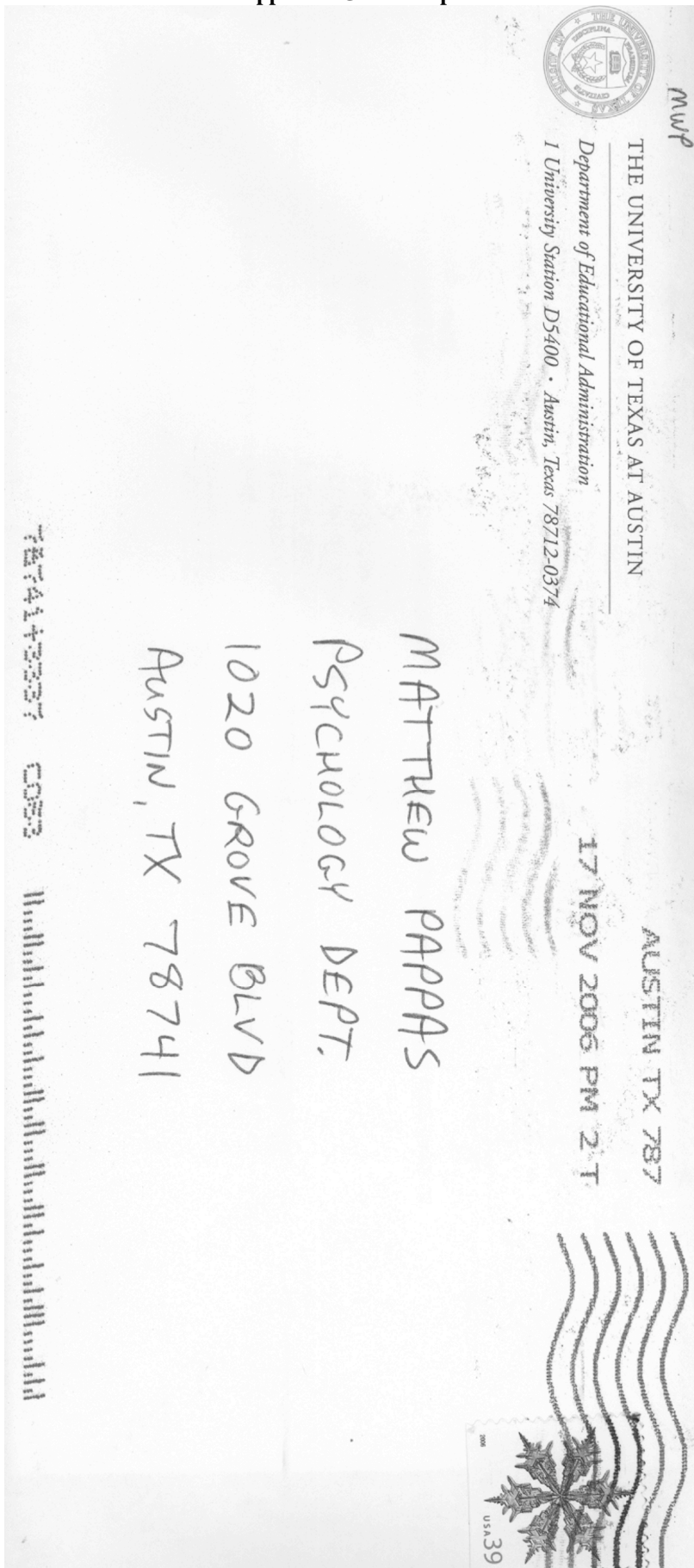
A                      a                      ?                      d                      D

4. The idea of God seems quite unnecessary.  
 A           a           ?           d           D
  
5. Although I do not believe in God, I am open-minded about the mysteries of life.  
 A           a           ?           d           D
  
6. Part of me exists independently of my physical person.  
 A           a           ?           d           D
  
7. I engage in contemplative activities such as Yoga or meditation.  
 A           a           ?           d           D
  
8. I have found a way to come to terms with my existence, or lack thereof.  
 A           a           ?           d           D

*9. If the above statements did not adequately represent your viewpoint, please characterize your spiritual or religious beliefs below or on the back of the paper.*

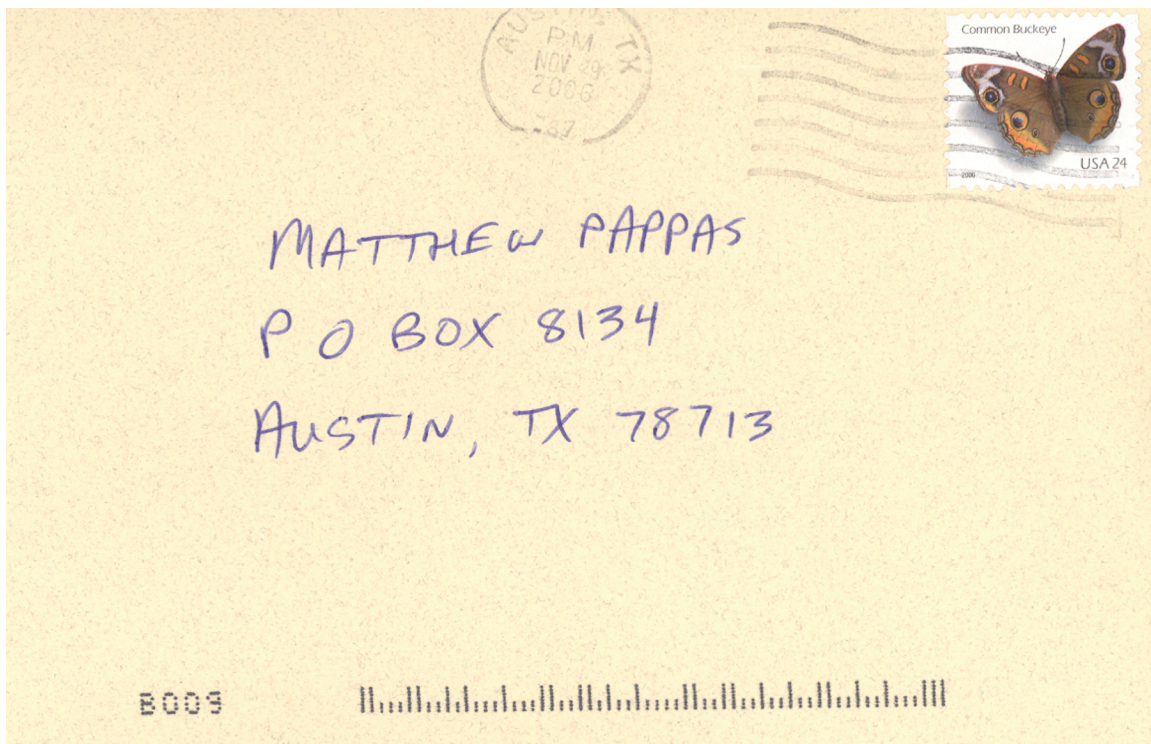
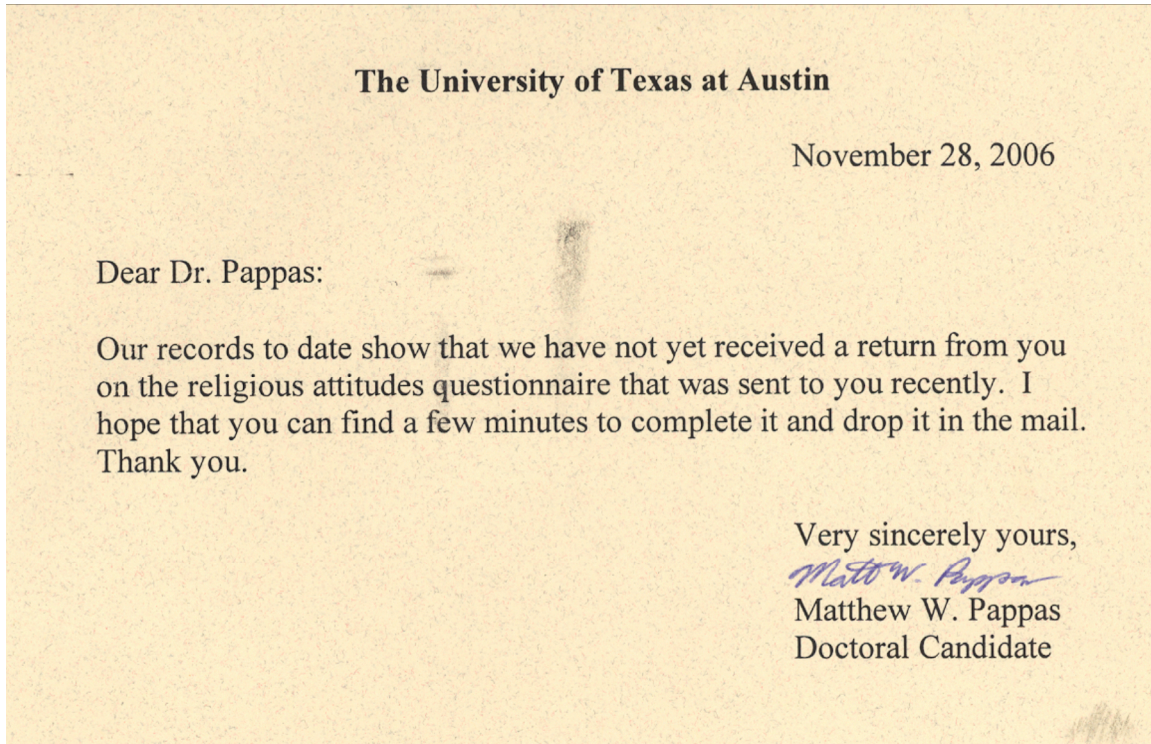
If you would be willing to be interviewed briefly by telephone or in person, how would you prefer to be contacted?

Appendix G: Envelope





## Appendix H: Postcard Reminder (Front and Back)



## Appendix I: Second Letter



COLLEGE OF EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN

*Department of Educational Administration • 1 University Station D5400 • Austin, Texas 78712-0374  
(512) 471-7551 • FAX (512) 471-5975*

December 13, 2006

Matthew Pappas  
Psychology Department  
1020 Grove Blvd.  
Austin, TX 78741

Dear Dr. Pappas:

I humbly and respectfully request your participation in a survey of eminent psychologists' religious and spiritual beliefs. This study replicates a survey initially administered ninety-two years ago by Dr. James H. Leuba of Bryn Mawr College's psychology department. His study revealed that members of different scientific disciplines held strikingly different attitudes about religion. Although his study has been replicated several times since then, none of the replications since 1958 have included psychologists.

The purpose of this study is twofold: to gauge the extent to which eminent psychologists' beliefs about God and immortality may have changed during the last ninety-two years, and to begin to understand the characteristics of the spiritual or religious beliefs of contemporary eminent psychologists. To these ends, I am using Dr. Leuba's original questionnaire as well as a brief, additional qualitative component.

The enclosed one-page questionnaire is being sent to the sixty-two members of the National Academy of Sciences in the psychology section. I hope you will complete the questionnaire and return it. Your participation will be invaluable. Each respondent will receive a completed version of the study.

Each questionnaire is coded only so that I will be able to know whom to contact for unreturned questionnaires. Your responses to the questionnaire will be kept completely confidential and will not be revealed to anyone. I will take particular care to obscure individuals' information.

If you have any questions, please feel free to contact me via email ([pappas@ccwf.cc.utexas.edu](mailto:pappas@ccwf.cc.utexas.edu)) or via telephone (512-XXXXXX).

Sincerely,

A handwritten signature in cursive script that reads "Matthew W. Pappas".

Matthew W. Pappas  
Doctoral Candidate  
Department of Educational Administration  
The University of Texas at Austin

- P.S.
- The risk associated with this study is no greater than everyday life.
  - There are no benefits for participation in this study.
  - The enclosed questionnaire can be completed within a few minutes.
  - This study is titled, "The belief in God and immortality: A survey of eminent psychology scholars."



## Appendix J: Third Letter



COLLEGE OF EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN

*Department of Educational Administration • 1 University Station D5400 • Austin, Texas 78712-0374  
(512) 471-7551 • FAX (512) 471-5975*

January 16, 2007

Dr. Matthew Pappas  
P.O. Box 8134  
Austin, TX 78713

Dear Dr. Pappas:

I humbly and respectfully request your participation in a survey of eminent psychologists' religious and spiritual beliefs. This study replicates a survey initially administered ninety-two years ago by Dr. James H. Leuba of Bryn Mawr College's psychology department. His study revealed that members of different scientific disciplines held strikingly different attitudes about religion. Although his study has been replicated several times since then, none of the replications since 1958 have included psychologists.

The purpose of this study is twofold: to gauge the extent to which eminent psychologists' beliefs about God and immortality may have changed during the last ninety-two years, and to begin to understand the characteristics of the spiritual or religious beliefs of contemporary eminent psychologists. To these ends, I am using Dr. Leuba's original questionnaire as well as a brief, additional qualitative component.

The enclosed one-page questionnaire is being sent to the sixty-two members of the National Academy of Sciences in the psychology section. I hope you will complete the questionnaire and return it. Your participation will be invaluable. Each respondent will receive a completed version of the study.

Each questionnaire is coded only so that I will be able to know whom to contact for unreturned questionnaires. Your responses to the questionnaire will be kept completely confidential and will not be revealed to anyone. I will take particular care to obscure individuals' information.

If you have any questions, please feel free to contact me via email ([pappas@ccwf.cc.utexas.edu](mailto:pappas@ccwf.cc.utexas.edu)) or via telephone (512-██████).

Sincerely,

A handwritten signature in cursive script that reads "Matthew W. Pappas".

Matthew W. Pappas  
Doctoral Candidate  
Department of Educational Administration  
The University of Texas at Austin

- P.S. •The risk associated with this study is no greater than everyday life.  
•There are no benefits for participation in this study.  
•The enclosed questionnaire can be completed within a few minutes.  
•This study is titled, "The belief in God and immortality: A survey of eminent psychology scholars."



### Appendix K: Postcard Included with Third Letter

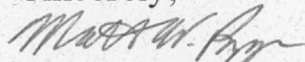
Thank you for tolerating the mail I have sent you.  
Enclosed please find a gift of \$2.00.

If you choose to complete and return the enclosed one-page questionnaire, I will send you a check for \$20.00.

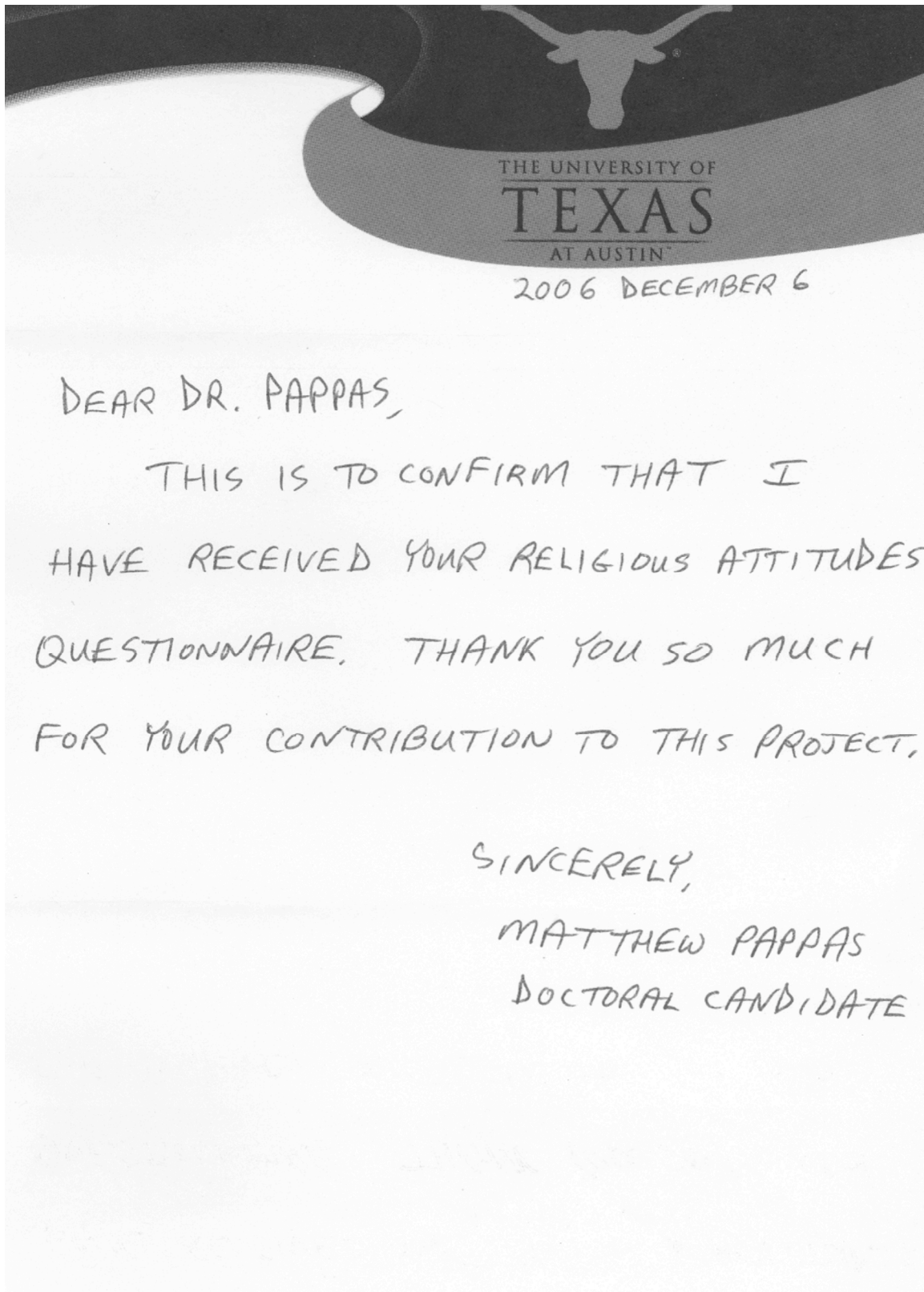
Moreover, if you are the first respondent to identify any manner in which I have breached my promise of confidentiality to you, then I will send you \$5,000.00.

I know your time and ideas are valuable. I'm sorry I can't offer more.

Sincerely,

  
Matthew Pappas

Appendix L: Confirmation Letter



## Appendix M: Questionnaire timeline and responses

2006 November 17: Questionnaire was mailed with first letter (Appendix E).  
2006 November 28: Reminder postcard (Appendix H) was mailed.  
2006 December 13: Questionnaire was mailed with second letter (Appendix I).  
2007 January 17: Questionnaire was mailed with third letter (Appendix J), two-dollar bill, and postcard-size note (Appendix K).

Each respondent who returned a completed questionnaire either received a confirmation letter (Appendix L) or was contacted at least once if they had indicated a willingness to be interviewed.

Each respondent whose questionnaire was returned after 2006 January 17 was mailed a confirmation letter (Appendix L) and a check for \$20.00 (except for 04AD who explicitly stated, "Please do not send the \$20.")

=====  
Respondent: 01AA  
Received: 2006.12.06

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b: x  
3c:  
4: A  
5: a  
6: D  
7: d  
8: a  
9: I think deism (belief in Gods & spiritual afterlife) is a pernicious delusion.

Additional comments:

On #5, respondent circled the phrase "the mysteries of life" and wrote next to it, "Such as what? The cause of genetic birth defects?"

On #6, respondent circled the word "exists" and wrote in the margin, "Ask a philosopher what this means!"

=====  
Respondent: 02AB  
Received: 2006.11.25  
1a:

1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c:  
4: A  
5: A  
6: D  
7: D  
8: a  
9:

Additional comments:

In the margin next to statement #3, respondent wrote, "I don't believe it is possible or meaningful."

=====

Respondent: 03AC

Received: 2007.01.27

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b: x  
3c:  
4: A  
5: A  
6: a  
7: D  
8: A  
9:

Additional comments:

=====

Respondent: 04AD

Received: 2007.02.12

1a:  
1b:  
1c:  
2a:  
2b: x  
2c:  
3a:

3b:  
3c: x  
4: d  
5: ?  
6: D  
7: ?  
8: ?  
9: I find it offensive to be sent money with this questionnaire.  
Please do not send the \$20.

Additional comments:

In the margin next to statement #4, respondent wrote, "It seems to be necessary for many others."

In the margin next to statement #7, respondent wrote, "I do Tai Chi, for exercise."

Respondent returned \$2 with the questionnaire.

=====

Respondent: 05AE

Received: 2007.03.07

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b: x  
3c:  
4: ?  
5: a  
6: d  
7: a  
8: d  
9:

Additional comments:

=====

Respondent: 06AF

Received: 2006.11.27

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: ?

5: A  
6: D  
7: D  
8: ?  
9:

Additional comments:

=====

Respondent: 07AG  
Received: 2006.11.25

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: a  
5: A  
6: D  
7: D  
8: a  
9:

Additional comments:

=====

Respondent: 08AH  
Received: 2006.11.25

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b: x  
3c:  
4: A  
5: ?  
6: D  
7: D  
8: ?  
9:

Additional comments:

=====

Respondent: 09AI  
Received: 2006.12.01

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a: x  
3b:  
3c:  
4: A  
5: A  
6: D  
7: d  
8: a  
9:

Additional comments:

In the margin next to #3, respondent wrote, "(though I recognize that immortality in another world is likely to be impossible)"

=====

Respondent: 10AJ  
Received: 2006.12.01

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a: x  
3b:  
3c:  
4: a  
5: a  
6: D  
7: D  
8: a  
9:

Additional comments:

=====

Respondent: 11AK  
Received: 2006.12.01

1a:  
1b: x  
1c:  
2a:

2b: x  
2c:  
3a:  
3b: x  
3c:  
4: A  
5: a  
6: D  
7: D  
8: a  
9:

Additional comments:

=====

Respondent: 12AL

Received: 2006.12.01

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: ?  
5: ?  
6: D  
7: ?  
8: ?

9: I personally do not believe in God, but believe it is important for Society as a whole to believe in God.

Additional comments:

=====

Respondent: 13AM

Received: 2006.11.30

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: a  
5: a



6: D

7: D

8: A

9:

Additional comments:

=====

Respondent: 14AN

Received: 2006.11.30

1a:

1b: x

1c:

2a:

2b: x

2c:

3a:

3b:

3c: x

4: d

5: a

6: D

7: ?

8: a

9:

Additional comments:

=====

Respondent: 15AO

Received: 2007.01.19

1a:

1b: x

1c:

2a:

2b: x

2c:

3a: x

3b:

3c:

4: A

5: D

6: D

7: D

8: A

9:

Additional comments:

Respondent was interviewed via telephone (see Appendix T).

=====

Respondent: 16AP  
Received: 2007.01.18

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: A  
5: A  
6: D  
7: D  
8: ?  
9:

Additional comments:

=====

Respondent: 17AQ  
Received: 2006.11.27

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: A  
5: D  
6: D  
7: a  
8: A  
9:

Additional comments:

=====

Respondent: 18AR  
Received: 2007.02.17

1a:  
1b: x  
1c:  
2a:  
2b: x

2c:  
3a:  
3b:  
3c:  
4: A  
5: A  
6: D  
7: a  
8: A  
9:  
Additional comments:

=====

Respondent: 19AS  
Received: 2006.12.12

1a: x  
1b:  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: D  
5: ?  
6: D  
7: D  
8: A  
9: When you are helpless and in mortal danger, you will always cry out to God for help.  
Sometimes, when doing so, help comes!  
Additional comments:  
At the end of the first sentence of #1.a., respondent inserted the words, "when desperate."  
In the margin next to #2.a., respondent wrote "neither."  
Respondent was interviewed via telephone (see Appendix S).

=====

Respondent: 20AT  
Received: 2006.12.16

1a:  
1b: x  
1c:  
2a:  
2b:  
2c: x  
3a:  
3b:  
3c: x

- 4: ?
- 5: a
- 6: d
- 7: D
- 8: A

9: You didn't ask about belief in something like an "inner light";  
I'm non-religious but if I were religious I'd be a Quaker, I think.

Question 6 is a tricky one—disagreeing with 6 doesn't entail disbelief in a spiritual side to humanity, any more than it entails disbelieving that we have minds.

Additional comments:

In the response to #9, respondent underlined the word "were" in the phrase, "but if I were religious I'd be a Quaker, I think."

=====

Respondent: 21AU

Received: 2006.12.09

- 1a:
- 1b: x
- 1c:
- 2a:
- 2b: x
- 2c:
- 3a:
- 3b:
- 3c:
- 4: A
- 5: A
- 6: D
- 7: D
- 8: A
- 9:

Additional comments:

In the margin next to #3, respondent wrote, "? how does one desire or not desire a state that does not exist and may not even make sense?"

In the margin next to #5, respondent wrote, "? as in, I trust in science?"

On #8, respondent crossed out the words "lack thereof" and wrote, "???"

=====

Respondent: 22AV

Received: 2006.12.15

- 1a:
- 1b: x
- 1c:
- 2a:
- 2b: x
- 2c:
- 3a:
- 3b:

3c:

4:

5: a

6: A

7: a

8: a

9:

Additional comments:

In the margin next to #3, respondent wrote, "not relevant—since I don't believe in it."

In the margin next to #4, respondent wrote, "to me—not to others."

=====

Respondent: 23AW

Received: 2006.12.28

1a:

1b: x

1c:

2a:

2b: x

2c:

3a:

3b:

3c: x

4: d

5: d

6: D

7: a

8: A

9:

Additional comments:

=====

Respondent: 24AX

Received: 2006.12.18

1a:

1b: x

1c:

2a:

2b: x

2c:

3a:

3b:

3c: x

4: d

5: d

6: d

7: d

8: a

9: Q4: Evidently some people have a psychological need for the concept of god. I am uncertain as to whether this need can be fully addressed in other ways.  
Additional comments:

=====

Respondent: 25AY  
Received: 2007.01.27

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b: x  
3c:  
4: ?  
5: A  
6: a  
7: a  
8: a  
9:

Additional comments:  
Respondent kept the \$2. Respondent returned the \$20 check with a note saying the money was unnecessary, but requested a summary of the study findings when available.

=====

Respondent: 26AZ  
Received: 2007.01.29

1a:  
1b:  
1c: x  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: D  
5: D  
6: D  
7: D  
8: D  
9:

Additional comments:

=====

Respondent: 27BA  
Received: 2006.11.25

1a:

1b: x

1c:

2a:

2b: x

2c:

3a:

3b:

3c: x

4: A

5: A

6: D

7: D

8: a

9: Question 3 is too narrow. I hope that some of my intellectual contributions will be useful after I die.

Additional comments:

Respondent was interviewed via email (see Appendix Q).

=====

Respondent: 28BB  
Received: 2006.12.01

1a:

1b: x

1c:

2a:

2b: x

2c:

3a:

3b:

3c: x

4: A

5: a

6: D

7: D

8: d

9:

Additional comments:

Respondent was interviewed via telephone (see Appendix P).

=====

Respondent: 29BC  
Received: 2006.12.01

1a:

1b: x

1c:

2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: A  
5:  
6: D  
7: d  
8: A  
9: Like most NAS members, I am an atheist and find most of the above questions absurd.  
Additional comments:  
Respondent was interviewed via telephone (see Appendix R).

=====

Respondent: 30BD  
Received: 2006.12.01  
1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: A  
5: A  
6: D  
7: D  
8: A  
9: Richard Dawkins has said it eloquently. Religious beliefs are nonsense, and the sooner Homo sapiens moves on from these primitive beliefs, the better.  
Additional comments:  
Respondent was interviewed via telephone (see Appendix O).

=====

Respondent: 31BE  
Received: 2006.12.02  
1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:



3c: x  
4: A  
5: A  
6: D  
7: ?  
8: D  
9:

Additional comments:

=====

Respondent: 32BF

Received: 2006.11.29

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: A  
5: ?  
6: D  
7: D  
8: ?  
9:

Additional comments:

=====

Respondent: 33BG

Received: 2006.11.29

1a:  
1b: x  
1c:  
2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: A  
5: a  
6: D  
7: D  
8: a  
9:

Additional comments:

=====

Respondent: 34BH  
Received: 2006.11.29

1a:

1b:

1c: x

2a:

2b:

2c: x

3a:

3b:

3c: x

4: d

5: ?

6: D

7: a

8: a

9:

Additional comments:

=====

Respondent: 35BI  
Received: 2006.12.07

1a:

1b: x

1c:

2a:

2b: x

2c:

3a: x

3b:

3c:

4: A

5: ?

6: D

7: ?

8: ?

9:

Additional comments:

=====

Respondent: 36BJ  
Received: 2006.12.05

1a:

1b: x

1c:

2a:  
2b: x  
2c:  
3a:  
3b:  
3c: x  
4: ?  
5: a  
6: a  
7: D  
8: A  
9: I am an atheist and I experience no conflict or doubts about my lack of belief in God or the afterlife.  
Additional comments:  
Next to #4, respondent wrote, "unnecessary to whom?"

=====

Respondent: 37BK  
Received: 2006.12.04  
1a:  
1b:  
1c: x  
2a:  
2b:  
2c: x  
3a:  
3b:  
3c:  
4: A  
5: A  
6: ?  
7: ?  
8: A  
9: Interesting survey! I don't know how to prove or disprove the objective existence of value. I choose to live consistent with what I understand to be "the good."  
Additional comments:  
In the margin next to #3, respondent wrote, "I don't know enough about what 'personal immortality' would involve to have an opinion."  
Respondent was interviewed via telephone (see Appendix N).

=====

Respondent: 38BL  
Received: 2006.11.25  
1a:  
1b: x  
1c:  
2a:  
2b: x

2c:

3a:

3b:

3c: x

4: A

5: a

6: D

7: D

8: A

9: Understanding the natural world does not, in my view, require any assumption about there being an omnipotent god. Nature is wonderful enough without resorting to superstition and magic. The idea of immortality may give comfort to some (or many) but it is supported only by faith. Our existence is subject to the laws of nature—in particular, neuroscience.

Additional comments:

Respondent underlined the word "nature" in the last sentence of #9.

=====

Respondent: 39BM

Received: No

=====

Respondent: 40BN

Received: No

=====

Respondent: 41BO

Received: No

=====

Respondent: 42BP

Received: No. Respondent returned \$2 with a note declining to participate.

=====

Respondent: 43BQ

Received: No

=====

Respondent: 44BR

Received: No

=====

Respondent: 45BS

Received: No

=====

Respondent: 46BT

Received: No

=====

Respondent: 47BU

Received: No

=====

Respondent: 48BV

Received: No

=====

Respondent: 49BW

Received: No

=====

Respondent: 50BX

Received: No

=====

Respondent: 51BY

Received: No. Respondent returned \$2 and questionnaire not completed.

=====

Respondent: 52BZ

Received: No. Respondent returned questionnaire not completed, along with \$2 and a note declining to participate.

=====

Respondent: 53CA

Received: No

=====

Respondent: 54CB

Received: No

=====

Respondent: 55CC  
Received: No

=====

Respondent: 56CD  
Received: No

=====

Respondent: 57CE  
Received: No

=====

Respondent: 58CF  
Received: No

=====

Respondent: 59CG  
Received: No

=====

Respondent: 60CH  
Received: No

=====

Respondent: 61CI  
Received: No

=====

Respondent: 62CJ  
Received: No

## **Appendix N:**

### **Interview — Respondent: 37BK**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

M: On the questionnaire, there was a question that said, “Although I do not believe in God, I am open-minded about the mysteries of life.” I'm curious about what kind of mysteries do you imagine or you expect there might be?"

R: Well, put it this way. I certainly wish there were more than there probably are. I love the idea of the unexpected and the surprising. That's pretty typical in a scientist. I guess I'm fundamentally an agnostic. I believe there are things we cannot prove, and some of them are fascinating. There are a great many mysteries about the world and about the lives we lead that I don't believe we'll ever be able to prove. I don't have any tools to do it with, that's for sure. And so most of the time, I simply choose to live as if I understood more than I do. I guess that's the easiest way to say it.

M: I've got to tell you that so far, the first couple of questions on this questionnaire, there's been a consensus in the people who've returned it so far, with regard to... none of the respondents have said they believe in God or immortality, and yet there are a few who have said they desire immortality intensely or somewhat. I think maybe you're the only one who didn't even answer that question. You wrote something on the side indicating that it's hard to even know what immortality means.

R: Don't you think that immortality might get really boring?

24 M: Yeah, after three trillion years, what are you going to do?

25

26 R: Hah! I actually am a science fiction fan and that is a current theme in science fiction.

27 And a lot of authors have treated it, and generally nobody seems really enthusiastic about

28 immortality once they get there... with maybe the exception of an author named van Vogt

29 who seems to like it.

30

31 M: So I don't know if there's a... it's one of those things where maybe there's just the

32 tension in life where we'd like to live a little longer, but we don't want to live forever.

33 Something like that?

34

35 R: That actually sums it up pretty well.

36

37 M: I've got another question. I had another question on this questionnaire where you

38 answered that you neither agreed nor disagreed with. The statement was, "Part of me

39 exists independently of my physical person." And I don't know if I wrote that question,

40 or statement, badly, or if you didn't know whether you thought part of you exists

41 independently of your physical person. And could you elaborate?

42

43 R: If you're referring to the mind-body problem, no one's ever solved that. Some

44 scholars think they have, but I don't think they have. I'm not sure I know. We all

45 experience. And that's a different sort of mind stuff than the physical world, we think.



46 But is it really? I don't really know. And I don't know any way to find out.

47

48 M: Do you put any stock in the people who use LSD or meditation or something like that  
49 to explore this kind of personal consciousness versus universal consciousness?

50

51 R: Well, I think there are a lot of things you can do to change personal consciousness—  
52 being hit with a club is one of them. But, you know, LSD and mind-altering drugs... I  
53 like what I've got well enough. I don't want to mess around with it, so I think that's  
54 pretty silly. You know, there are mystics who fast and have altered experiences as a  
55 result of it. One could argue that it's all brain chemistry, but I don't think they can prove  
56 that either. Certainly, in our daily lives, we have a lot of experience that tells us that you  
57 can certainly mess up consciousness in a lot of ways.

58

59 M: Right, right.

60

61 R: And whether or not the people who think they are achieving some higher plain of  
62 existence are doing that or really getting there, I just don't know. I've never been there,  
63 so I don't even have a personal experience that I can refer to.

64

65 M: One of the questions on the questionnaire was with regard to whether you had  
66 engaged in any kind of meditation or yoga or something along those lines.

67

68 R: I attended Quaker meetings as an undergraduate because I admired the Quakers a  
69 great deal. And I remember being excited at the beginnings of these hours of quiet...  
70 Everybody was telling me I would experience an inner light. Well, I got to liking the  
71 meditation a lot and certainly my mind would wander and I found that interesting and the  
72 sessions seemed to get shorter and shorter, but I never had any inner light. The other  
73 people around me seemed to.... [garbled recording]... That's probably the closest I've ever  
74 gotten to meditation, although I have let colleagues who thought they were studying  
75 hypnosis try to hypnotize me, and that's a kind of meditation. I think it's kind of  
76 interesting.

77

78 M: It's an unknown, I guess.

79

80 R: Yes. As you can see, basically I really do think most things are unknown. And I  
81 think it's why I like science—that with a set of rules, we can at least establish certain  
82 things, if you buy into the set of rules. Of course, you don't have to do that either.

83

84 M: So we can know some things, but not a whole lot.

85

86 R: Well, you can reason within a system, if you set up the rules. But, you know, other  
87 than that, the only reason we sort of accept logic is because we all sort of agree on the  
88 same system. But there are people who don't, and it's hard to flaw them.

89

90 M: Do you find that, within your field, or within psychology in general, or within your  
91 particular area, that you are disagreeing with your colleagues about those basic rules of  
92 science or logic?

93

94 R: You know, that's interesting. I can answer that at two levels. The answer is yes,  
95 because my profession is characterized by finding different ways to look at things and  
96 coming to the conclusion that my colleagues are wrong about the way they do it—  
97 particularly [respondent's subfield of psychology]. On the other hand, one could argue  
98 that we're operating within the same rule set... it's just that I'm better at it than they are.  
99 Now, of course, they would conclude they're better at it than I am [laughs]. The history's  
100 going to have to decide. So I would say, do I ever challenge the fundamental rules?  
101 Probably not, because I think that most of what I believe can be pretty well demonstrated  
102 within those rules. And when I disagree with others, it's my impression that they're not  
103 following the rules. But again, that's pretty subjective.

104

105 M: Do you feel that basically there is an agreement somehow that rationality is valued  
106 for its own sake or... or just as a tool? I don't know how to phrase the question exactly,  
107 but it's kind of going down that alley, I'm not sure.

108

109 R: It's some. I certainly prefer what I perceive to be a rational life. And I don't like  
110 people who seem to behave what looks like irrationally to me. Although sometimes it  
111 turns out that they have their own reasons and that they were rational within their world.

112 It just seems to me... I do very much value the experience of good and bad. And I think  
113 some things are bad. I think hurting people is bad. And I think doing nice things for  
114 people is good. I think raising your kids, you know, to work hard and have respect for  
115 others is good. Now, I can't prove any of that, but I made a decision to choose to live as  
116 if I could. And I'm going to live according to those rules whether I can prove them or  
117 not. [A social psychologist who studies moral behavior once commented] about people  
118 who seemed to set out to do evil. He said they don't... that in his view, everybody thinks  
119 they're doing good, they just redefine the world they live in. You see, it's an interesting  
120 thing. You know, you wonder, did Hitler get up and say, "I'm really going to do  
121 something rotten today." Or did he manage to convince himself that what he was doing  
122 was somehow for the greater good, in his view? I mean, it's kind of scary that the latter  
123 might be true.

124

125 M: Along those lines, maybe this is redundant... you say you prefer a rational life, but  
126 even though that's what you state that you prefer, I'm going to ask anyway if you think  
127 maybe that you are basically rational or basically irrational? I know you stated what you  
128 prefer, but...

129

130 R: I think I'm a rational person.

131

132 M: A rational person.

133

134 R: Yes.

135

136 M: Yes. Ok, what is most important or special to you?

137

138 R: Are you going to give me some choices or...?

139

140 M: Oh, no, it's open-ended. This is an open-ended part. This is because I don't know.

141 Uhh... you know, there are people who if they were religious, they might say, "Of course,

142 Jesus is most important to me.... or there's this particular value... or my children... or

143 whatever...." So this is why I ask. Or being rational might be most important. I don't

144 know.

145

146 R: I'm not sure what rationality is, but I wouldn't pick an abstract value like that over

147 doing good for people. I mean, I want good things for my children. I want them to be

148 healthy. I don't want them to be hurt by anybody. And I'd like to think that I'm a person

149 who doesn't hurt other people. I think that's probably most important to me. ... And then

150 you have to be a reviewer for journals [laughter] and then you have to hurt people

151 [laughter].... I don't like doing that. That's very hard for me.

152

153 M: Yeah, that's just one of the chores like serving on committees and so forth.

154

155 R: It sure is.

156

157 M: Well....

158

159 R: You're really doing interesting work. What is your long-term interest? What would  
160 you like to do once you get out of school?

161

162 M: I teach psychology at a community college here while I am working on my Ph.D.  
163 I'm doing my dissertation right now—that's why I'm doing this. And I'm in the College  
164 of Education, Department of Educational Administration. And if I had my druthers, I  
165 would just be a healthy person with a little family and a couple of dogs living on a farm.

166

167 R: [laughter]

168

169 M: But the reality is, I'll probably keep... I would like to continue to do some sort of  
170 research and ideally teach one class per semester for the rest of my life. One I like, but  
171 more than that is work. That's where I am.

172

173 R: That sounds like a wonderful life.

174

175 M: Well, it's what I've chosen and I don't know if I would choose anything else. So  
176 that's what I'm trying for.

177

178 R: Well, I really wish you well. I hope it works.

179

180 M: Thank you. I'll tell you the truth, there are many more questions I could ask you, but

181 I don't want to hold you forever and I'm trying to figure out.... you've gotten to the core

182 of some of these issues, and it's hard to ask any kind of questions related to this stuff. I

183 mean, it's difficult. I don't know if I could ask you one more thing?

184

185 R: Sure.

186

187 M: I don't know if you remember the questionnaire, or after just having this discussion

188 on the phone, if there is a question that you think should have been included—or some

189 perspective—you think would have been worth asking to the respondent?

190

191 R: I assume that you're doing this as a follow-up to something that was done earlier. I

192 mean, are you comparing changes in psychological attitudes over time?

193

194 M: That's true.

195

196 R: What was the most interesting thing in the earlier studies that you found?

197

198 M: The earliest one—it was done almost a hundred years ago—he used not just people in

199 psychology, but historians and chemists and biologists and mathematicians, and what he

200 found was that the psychologists had the greatest percentage who did not believe in God  
201 or immortality. And that they also had the highest response rate. That occurs in other  
202 studies as well, probably because the psychologists have done it themselves and they  
203 want people to respond to their own surveys, so they do it themselves. But, uh, with  
204 regard to the one I sent out, I added some questions to that original questionnaire and I  
205 have not gotten a consensus on any of them from the respondents. So there are some  
206 respondents who say, "No, I don't think the idea of God is useful," and other say, "Yes, I  
207 don't believe in God, but it's good for society." There are some who have engaged in  
208 some sort of meditation, and others who say absolutely not. And so on and so forth. I  
209 don't know.

210

211 R: It sounds like you're facing the fact that we live in a more complicated, more varied  
212 world now. And people have an opportunity to get exposed to a lot of different ideas.  
213 And probably we're a heterogeneous society compared to the society the way it was when  
214 the earlier studies were done.

215

216 M: There might have been minorities, with regard to different beliefs around the country.  
217 But now it's much more evident that there are people who have very different beliefs. I  
218 don't know how it's going to turn out.

219

220 R: It's a fascinating enterprise. I certainly hope it turns into a wonderful paper. I'll look  
221 forward to reading it.



222

223 M: I'm satisfied with the conversation with you. I really appreciate you talking with me.

224

225 R: Certainly. Well, I think what you're doing is a worthy thing to do. It's nice to study  
226 ourselves.

227

228 M: I'm glad you think that, and you're not the first person that I'm following up with, but  
229 I know there are respondents, or those who might have responded, who were concerned  
230 about the ongoing conflict in our society between science and religion—and they're afraid  
231 of having this project be used to make it look bad for people in psychology—that they're  
232 anti-religion or that the evangelicals will get mad and take money away from their  
233 studies.

234

235 R: There was an associate dean at Yale that said something one day that I really loved.  
236 [...] He said, "Facts are friendly." That's a wonderful idea. We have to deal with what  
237 is.

238

239 M: That's what scientists do, is look at the data. And whatever the data say, that's what  
240 we have to deal with.

241

242 R: I hope you got enough responses to get a good paper out of it, because I think it's a  
243 good thing to do.

244

245 M: Thank you. Thank you very much. If there are any other questions you might have  
246 for me, I'd be glad to try to answer them.

247

248 R: Sure, why don't you give me your phone number?

249

250 M: I'll give you my cell phone number. It's 512- [...].

251

252 [closing remarks....]

253

254

254

255

**Appendix O:**

256

**Interview — Respondent: 30BD**

257

258

259 M: One of the statements on the questionnaire that you filled out was, "Although I do not  
260 believe in God, I am open-minded about the mysteries of life." And you agreed strongly  
261 with that. I'm curious about what kind of mysteries you imagine or you think you might  
262 find.

263

264 R: Well, just the obvious that... First of all, let me ask you, I mean, what department are  
265 you in and in sort of what field is this being carried forward.

266

267 M: And please do ask any other questions you might have, but I teach psychology at the  
268 local community college here at Austin Community College, but I am working on my  
269 dissertation for my Ph.D. at the University of Texas in the College of Education in the  
270 Department of Educational Administration. So, my dissertation is a little bit out there for  
271 my department, but that's what I'm doing.

272

273 R: And what's the gist of the dissertation, the title of the dissertation? I'm just curious.

274

275 M: I ought to remember the title of the dissertation, but it's basically looking at the

276 spiritual and religious attitudes of eminent psychologists in the United States. It's a  
277 replication. There was a study done almost a hundred years ago by another psychology  
278 professor, and then another one done about fifty years ago by someone who's still living  
279 over in California. His name is Ronald Mayer. So it's been replicated before, but not  
280 with psychologists in almost fifty years, so the first part of this survey was identical to  
281 what was used almost a hundred years ago, and then I followed up with some other stuff.

282

283 R: OK. That's fine. I just sort of wanted to know where you're coming from, so that  
284 gives me a good idea. So your question was, how do I define the mysteries? I guess in a  
285 very conventional way from the point of view of, I guess, most scientists, or a lot of  
286 scientists. I mean, there's obviously vastly more that we don't know than what we do  
287 know, and I think particularly with regard to cosmology, the origin of life, what the future  
288 holds, those are the mysteries that immediately come to mind as conventional ones that  
289 most people would admit we simply don't know the answers to, and those answers are  
290 going to be remarkable ones if any of us are around to understand them at some distant  
291 time in the future.

292

293 M: You mentioned cosmology. Do you find, as the years go by, that you are more  
294 involved with people in other disciplines, or less involved, in trying to understand things?

295

296 R: I would say no more or less. I'm an inquisitive person who's always interested in the  
297 ideas coming from other fields.

298

299 M: There was one more statement I wanted to follow up with, from the questionnaire,  
300 which was, "Part of me exists independently of my physical person." And you said no,  
301 you disagreed with that. Have you settled, just as a practical matter on seeing a person as  
302 being defined by their DNA or do you go beyond that to...

303

304 R: Certainly not their DNA. I mean, that's not at all the case. I mean, no geneticist  
305 would want to claim that.

306

307 M: How would you define... or would you be able to identify that boundary between the  
308 individual and the environment? Is it an easy thing or, as a practical matter, do you deal  
309 with that much?

310

311 R: Well, for many years, I was [in a subfield of biology], so I thought long and hard  
312 about the nature-nurture kinds of issues. But I'm not sure what the focus of the question  
313 is. I think, you know, to put it in a nutshell, I'm very much a determinist and a  
314 materialist. And if by those pejorative terms, one simply means somebody who doesn't  
315 believe there's anything beyond physics, chemistry, and biology, you know, and what  
316 human beings are. The alternative to that is, which few people I think these days would  
317 agree with if they thought about it, is a kind of dualism which is unacceptable in the sense  
318 that there's absolutely no evidence for it. So, yes, I guess you'd say I'm a materialist or a  
319 determinist or some combination of those things.

320

321 M: You used the word "pejorative" yourself. Do you feel that's our culture imposing  
322 itself?

323

324 R: Yes.

325

326 M: Scientists, I think, might not say those are pejorative to be materialists or naturalists  
327 or whatever.

328

329 R: I think they might not, but broadly speaking, most people will consider those not  
330 terms that they want to apply to themselves. Scientists, I don't know how the percentages  
331 would break down, but certainly some substantial fraction would consider themselves in  
332 that same camp, but I know many others who wouldn't.

333

334 M: Right. I wonder if you could tell me what do you find most important, or special, to  
335 you? I know that's a very open-ended question.... Some people who might be religious  
336 might automatically say, well, Jesus is most important to me... or I can imagine a scientist  
337 saying that, well, being rational is most important to me.

338

339 R: I'm not a religious person at all, as I think I indicated in the questionnaire. I'm an  
340 atheist in sort of an outspoken way in the sense that I think so many of the world's  
341 problems today are coming from religious biases and prejudices and things that

342 eventually will pass from human culture, but probably not for a long time. So, I mean,  
343 what I find most important is certainly seeking the truth, but I would say the truth is to be  
344 found in as cool-headed an examination of reality as is possible. It's not always possible,  
345 but that's where good things come from, as opposed to bad things.

346

347 M: Have you ever had an experience of finding the truth, or truth—capital "T" or lower-  
348 case "t" or whatever—through some method that might be inarticulable?

349

350 R: No. No.

351

352 M: No?

353

354 R: No. I think the truth is, by definition, articulable. If it's not articulable, it's  
355 nonsense... it's nonsense.

356

357 M: I read every once in a while about people who through meditation or through  
358 dropping acid or whatever...

359

360 R: That sort of thing is nonsense as far as I'm concerned.

361

362 M: OK. I don't know if you recall the questionnaire I sent you.

363

364 R: I do recall it, but not in detail.

365

366 M: Sure, that's OK. I understand, because that was last month....Well, are there any  
367 questions that you feel might have been appropriate on a questionnaire or that I, within  
368 this context, might have asked you or might have asked the respondents?

369

370 R: Well, I think your project is an interesting one, and of course I'm interested in the  
371 outcome. You know, I don't have a very high opinion—or as high of an opinion, I  
372 guess—of psychologists or the field of psychology. I'm basically not a psychologist; I'm  
373 really [in a subfield of biology and have] come lately to do things that have typically been  
374 the province of psychology, but I don't have a very high opinion of either the history or  
375 the methodology or the insights of psychology. Obviously, there are many, many  
376 exceptions to that sort of statement, but compared to physics, chemistry, the biological  
377 sciences, I think, psychology has lagged behind in its insights and worldview. I'm saying  
378 that because I think I have a much better sense of what biologists and how they would  
379 answer the questions that you asked than how psychologists would answer them. So I  
380 suspect you'll get a softer, more spiritual set of answers from psychologists than if you  
381 asked biologists or certainly physicists or chemists, but I'd be interested to know that.  
382 No, there are no special questions. But I get a lot of questionnaires and I throw most of  
383 them in the trashcan. I answered yours because it seemed interesting.

384

385 M: Thank you.



386

387 R: And I'm interested in what you come up with for your thesis, but I guess I wouldn't be  
388 enormously optimistic that you'll get uniform rationality from people.

389

390 M: I can tell you, since you seem interested, that I'm either at fifty percent now or I'm  
391 one short of fifty percent in the response rate. And there's a consensus with regard to the  
392 early questions in the questionnaire about... there's no one who has stated that they  
393 believe in God or immortality. But then in the following questions, there is not a  
394 consensus, and those are questions with regard to whether God is a necessary or useful  
395 concept, or whether people engage in meditation or yoga, or these various things. And so  
396 there's not consensus, and I'm exploring that.

397

398 R: Yes.

399

400 M: But as I look back—I've been in college a while, but I haven't been an academic  
401 nearly as long as you or any of my respondents—and I see behavior of academics—all of  
402 us, really—certain behaviors that seem religious. For example, the commencement or  
403 baccalaureate ceremonies that can look like a church service, even at a secular school.

404

405 R: Well, sure, there is certainly a grey zone where symbolism and tradition and  
406 conventional ways of doing things are carried forward, not because anybody takes them  
407 terribly seriously, but because it adds a certain grace and aura to the enterprise of

408 academic progress and accomplishments for students, but I don't think anybody takes  
409 their academic robes as seriously as people would take their religious robes, for example.

410

411 M: Yeah.

412

413 R: As a matter of fact, I think most people consider it sort of a joke, but it's a joke they're  
414 willing to go along with because it has a certain value for the participants—the younger  
415 participants, anyway.

416

417 M: Yeah, for frankly the fundraisers and so forth.

418

419 R: Sure.

420

421 M: Yeah. Well, I could go on and on, but I feel like basically you've communicated to  
422 me how you feel about these things, and I really appreciate your help.

423

424 R: OK. Well, good luck with your project, and I'd be interested to see the final product.

425

426 M: Thank you. Thank you so much.

427

428 R: OK.

429

430 M: Bye-bye.

431

**Appendix P:**

**Interview — Respondent: 28BB**

431

432

433

434

435 M: One of the statements on the questionnaire was, "Although I do not believe in God, I  
436 am open-minded about the mysteries of life." And you said you somewhat agree.

437

438 R: Yes.

439

440 M: I'm wondering what mysteries of life do you imagine that there might be.

441

442 R: Well, a lot of people do have strong feelings of mysteries, strangeness, holiness, and  
443 so on, in certain situations in their lives that make a great impression on them. And I  
444 have not myself had these kinds of mystical experiences, but I do believe the people who  
445 have had them. And so...

446

447 M: It sounds like... do you hope that you would have those experiences, or not? Is it  
448 something that you seek, or not?

449

450 R: I don't believe so. There's a certain sense in which everything you don't do is a loss.  
451 And there are lots of things I haven't done that I wish I had done. But these religious or  
452 mystical experiences are not a big part of such things.

453

454 M: Another one of the statements on the questionnaire said, "Part of me exists  
455 independently of my physical person." You had an answer that was very common: you  
456 disagreed strongly. But I wonder, how do you define yourself? How do you define a  
457 person? Or how do you define yourself in particular, in light of the existence of mirror  
458 neurons, or the fact that we have these hundreds of different species of bacteria in our  
459 digestive tract, or the fact that there are identical twins who we consider to be distinct  
460 people. How do you define yourself? Or do you feel like you can do it beyond just a  
461 conventional way?

462

463 R: [...] I got tired of hearing social psychologists claim that "the self" is nothing but a  
464 social construct. And this seemed to me rather too broad a claim, so I thought through  
465 about the self-perception and these other things I've mentioned to you.

466

467 M: So it sounds like you felt the social psychologists had oversimplified it.

468

469 R: Yes.

470

471 M: That it was much more complicated. And I guess it goes without saying that you also  
472 would feel that more religious people are oversimplifying by saying that there's a soul  
473 and that's essentially what the self is, or something like that.

474

475 R: Yeah, well, it's hard for me to make any sense of the separate soul.  
476  
477 M: Yeah.  
478  
479 R: People do have—again, to harken back to what we were saying a few minutes ago—  
480 people do have experiences that seem to them very important, that are not based on  
481 immediate perception or on the body. And you've kind of got to respect that experience.  
482 And I think talking about the soul, as one begins to think about certain matters, one needs  
483 a term that reflects somehow this special inner state and how different it is from ordinary  
484 life, and that's, I guess, what you called "soul." But it's not just that not everybody  
485 believes in the soul, but there are whole cultures where it doesn't quite come up.  
486  
487 M: Right. Well, there was another statement on the questionnaire that has to do with... it  
488 said, "I have found a way to come to terms with my existence, or lack thereof." And you  
489 said you somewhat disagree. And I wonder, is that something you have struggled or  
490 hoped for, to find a way to come to terms with?  
491  
492 R: Well, I'm not sure what that notion, "come to terms" is that the question uses. It  
493 might be construed to mean that "I used to object to death, but I don't object anymore."  
494  
495 M: What does that mean? That you don't object to it?  
496

497 R: I meant that perhaps that's what your question meant. Could you read me that  
498 question again?

499

500 M: Yes. The statement was, "I have found a way to come to terms with my existence, or  
501 lack thereof."

502

503 R: Yeah. Well, it sounds to me—although I'm not certain what the sentence means—but  
504 perhaps by coming to terms with the lack of my existence, that seems to suggest that I'm  
505 supposed to no longer complain about the fact I'll be dead by and by. Maybe that's not  
506 how you meant the question, but that seemed to be a possible interpretation. "Come to  
507 terms with." People use that phrase "come to terms with" when they want to say, "I'm not  
508 going to fight this anymore."

509

510 M: Sure.

511

512 R: Perhaps I misunderstood the question though... in which case, try me again.

513

514 M: No, that sounds right. Although I am kind of posing these things open-endedly so  
515 that I can go into this thinking that there are things that I'm going to learn from you. So  
516 it's not a yes-or-no question. But it does puzzle me sometimes when I hear a scientific  
517 psychologist say, "No, I don't want to live forever; that would be silly." And on the other  
518 hand, they do want to live a little bit longer than they are alive right now.

519

520 R: [laughter] I've noticed that, too, about myself.

521

522 M: So, where to draw the line?

523

524 R: Well observed.

525

526 M: I don't know. And we scientists... it seems like we try to define things and be  
527 accurate and precise and draw the line, and so I don't know where we're trying to do that.

528

529 R: Well, let's go back to the beginning of this question again. Uh... you just said, as a  
530 scientist, something about we are expected to mind or, I forget exactly how you phrased  
531 it.

532

533 M: [laughter] I don't remember what I said either.

534

535 R: We'll start again then.

536

537 M: But I have, in this survey and before... have heard psychologists—scientific  
538 psychologists, I might say—say that they don't.... They seem nonchalant about—

539

540 R: About dying, about death.



541

542 M: "Immortality, that's no big deal. I don't want to live forever. That's crazy."

543

544 R: Good question. And I think you are right to suspect the answers you get are not

545 entirely truthful. After all, if you ask me, "Am I afraid to die?" and I say, "No, let them

546 come, I wave my sword, I am etc..." That's a way of flattering oneself.

547

548 M: Mmm-hmm.

549

550 R: It's not how everybody thinks. It's not even how all psychologists think. It may not

551 even be how the person who expresses this response, thinks. I know I've done this

552 myself. And I guess I did a lot more when I was younger... young and brave and strong

553 and so forth. Now, I'm sort of puttering along here with [a neurological disorder]. It's

554 not so obvious about whether I mind or not.

555

556 M: Right.

557

558 R: Many of these questions do come up, and they come up when you're drawing up your

559 living wills and all that kind of stuff.

560

561 M: Right, right.

562

563 R: And so you mustn't take for granted that any particular answer you get on these  
564 comments is true or valid. They may not be. They may just be faking.  
565  
566 M: Yeah. It is a given that... I don't know, perhaps you know someone who doesn't lie to  
567 themselves [sic] at least occasionally, but I don't know if I do.  
568  
569 R: Uh-huh.  
570  
571 M: And so I keep that in mind. Nevertheless, there must be some presumption of  
572 honesty or truth, rather, in the communication between humans, I guess.  
573  
574 R: Well, it depends upon the situation. And I don't know that there needs to be a  
575 presumption... If you ask me what the weather is like up here, and I tell you it's been a  
576 beautiful day, and there's a presumption of honesty, so you assume probably it was a  
577 beautiful day. But maybe I was just being impatient of your question and wanted to get it  
578 over with and go on to the next one.  
579  
580 M: Sure, sure. Yeah. All right, well, that sounds like a good segue. I'll move on to  
581 another question: What is most important to you? Or what is special to you?  
582  
583 R: Is that the end of the question?  
584

585 M: It is very broad, isn't it?

586

587 R: At the moment, I have a wonderful relationship with a [romantic] friend of mine, that

588 I've had now for [a number] years, and I would say that was the most important thing at

589 the moment.

590

591 M: Yeah.

592

593 R: Except I have a number of grown children, and they're important to me too. But I

594 have nothing unconventional here. I guess, twenty or thirty years ago, I might have said,

595 "It's really important to me to make a contribution to psychology and become famous and

596 the like." I don't really say that kind of stuff anymore.

597

598 M: Mm-hmm.

599

600 R: I'm not entirely sure what the right answer is. Perhaps I'm not telling you the truth

601 now.

602

603 M: Yeah.

604

605 R: It's a difficult topic.

606

607 M: Yes. I know I am asking very personal questions.

608

609 R: Well, it's all right, because I don't have to give you honest answers. But more to the  
610 point, really, is that we don't know each other...

611

612 M: Yes.

613

614 R: And that is sort of protective of this relationship. But I certainly haven't told you  
615 anything that I would mind anybody knowing. So I have a lover and I have children, so  
616 what else is new?

617

618 M: Yeah, yeah. As I talk to you right now, I am realizing—and this isn't the first time,  
619 but I'm wondering how I will obscure this information that we've discussed [...] and so  
620 forth. I'm not sure how I'm going to handle that, because this is supposed to be—and it is  
621 what I've guaranteed—that it would be anonymous.

622

623 R: Tell me, how did you get to me in the first place? Was this a random selection?

624

625 M: No, no it's not. Because you're one of the National Academy of Sciences members in  
626 the psychology section. That's the same group that was used almost fifty years ago. And  
627 a similar group was used almost a hundred years ago, with the same questionnaire. I've  
628 just extended it a little bit to pose some questions that seemed to make more sense, at

629 least to me, for today. So... Have you ever had an experience that was some sort of  
630 communion with the infinite or universal consciousness or transcendence or something  
631 like that?

632

633 R: I don't think so. When I was young, I used to hope I would have such experiences.  
634 But I guess why I hoped is because I thought it would be very interesting and I would  
635 become wiser because of it, etc. But, in fact, I don't think I really did.

636

637 M: You were saying earlier that you used to desire some sort of fame and that now what  
638 is special to you is your personal relationships. Do you feel like that's a change for the  
639 better, or that it's just part of maturation? Do you feel like you are the same person that  
640 [you were] thirty years ago? Or are you a different and distinct person?

641

642 R: Well, I don't know exactly what those questions mean. One is often confronted with  
643 questions of that sort. "Are you the same person as before?" [...] If you ask me, "Are  
644 you the same person that you used to be?" I think I can give a pretty good answer, "Yes."  
645 Because the memories I'm laying down now are continuous with and dependent upon the  
646 ones I already have. Several years ago, I went with my friend to [a particular  
647 geographical tourist destination], a glorious place in [a particular country], and now I'm a  
648 person who's been to [that place]. And that's something to be! I'm glad I didn't miss it.

649

650 M: Right.

651

652 R: On the other hand, I'm not such a different person as to be confused about the whole  
653 thing. Am I going in the right direction here?

654

655 M: I'm not looking for a particular answer. I'm curious.

656

657 R: Yeah, you're not, but the question is obviously looking for something. And I'm  
658 groping again with this, OK, am I the same person?

659

660 M: Well, for example, you mentioned one of the sources of self-knowledge is private  
661 self. Do you feel like your private self is the same now as it was twenty years ago?

662

663 R: Yes, it is not as much different as I had expected it to be. You know, I am now in my  
664 [...] seventies. And uh....

665

666 M: But your perceptual self—I assume, because you mentioned [the neurological  
667 disorder]—maybe you do notice that being different?

668

669 R: Well, maybe, but perception is a pretty reliable source of information about what's  
670 really happening. But... uh... Am I the same person?... I guess there's just no one answer  
671 for that. Uh, suppose you consider an amnesic for a moment (That's not me. I don't have  
672 amnesia. I may get it next week, but I don't have it now.) Suppose I was an amnesic and I

673 had forgotten large parts about my life, and I don't remember my youth or my education  
674 because I'd forgotten all that stuff. Am I the same person as before I forgot it? Well,  
675 there it turns out that there's actually a little bit of data, collected by my [associate. He]  
676 collected some data from amnesics, and it turns out that even people who have amnesia  
677 and don't remember large chunks of their actual life, nevertheless there's a sense in which  
678 they're the same person as before. Their friends notice this. The friends of amnesics are  
679 fond of telling investigators, "He's the same person. I recognize the way he laughs, the  
680 jokes he tells, the way he goes, the ways he walks. It's him, no matter what he  
681 remembers." That's really interesting talk, it seems to me, but it leaves one at a loss as to  
682 how to answer the question you asked me.

683

684 M: Yeah.

685

686 R: It's a harder question than you thought, isn't it?

687

688 M: I've been continually challenged by this, so I don't know the answers to these. I have  
689 a hard time just asking the questions.

690

691 R: Yeah. Great.

692

693 M: And I don't know what else to ask you. If you were in my shoes and you were  
694 putting together that questionnaire and making this call, is there a question that you feel

695 should have been asked to the respondent, that was not asked? Do you think there's one  
696 that's particularly relevant?

697

698 R: I'm still unclear about what motivates your questionnaire. Early on in our  
699 conversation this afternoon, I thought that it had maybe a lot to do with religion, that  
700 maybe you were especially interested in people's religions, at least about God,  
701 expectations about the afterlife, that sort of stuff. But as our conversation went on, it  
702 seemed that you were not limited by that—and maybe not even all that interested in it,  
703 because you started asking me a lot of other questions. And now I feel I don't quite know  
704 what your purpose really was, and therefore I don't know how I could've helped you  
705 more.

706

707 M: That's similar to just the basic issue of how to find meaning in life. Because what's  
708 the answer to that? I'm not sure. This project is defined as finding what the spiritual and  
709 religious attitudes of psychologists are, and yet I did not want to—and I still do not want  
710 to—control where you go with these ideas. And so if you had started talking about God  
711 and Jesus and you're a Mormon or a Presbyterian or whatever, then I would have gone  
712 with that, because I want to find out what you think. And so that's what I'm trying to go  
713 along with, and explore that.

714

715 R: That's very good. I'm encouraged to hear that, in certain ways. I could easily imagine  
716 a questionnaire that was built primarily around notions of conventional religion and if I



717 was a Methodist or whatever. And if you had asked me that, I would have, in the first  
718 place, lost interest in the questionnaire soon—my responses would be a little aggravated,  
719 you know... "Well, what makes you think that that's the most important thing?" You've  
720 avoided that problem by leaving it open to what the most important things are, but  
721 unfortunately when you leave these problems open as wide as that, it's hard to make  
722 sense of what comes through.

723

724 M: Right, right. I am asking you to—I don't know—maybe create what is this reality,  
725 what is your—even though we're not calling it religion—what is special to you.

726

727 R: It may be special to me, but I've never thought that this is the big, big question. I  
728 mean, the way you phrased it a few minutes ago, about the meaning of life. It's such a  
729 cliché, the meaning of life, that Monty Python can make a movie about it. And, uh, so  
730 when you ask somebody, "What do you think the meaning of life is?" you kind of can't  
731 get anywhere with that.

732

733 M: That's the way you feel.

734

735 R: Well, no, that's the way I feel on your behalf. I don't think that with a questionnaire  
736 of this rigid a form you're going to get an answer to how do people get the meaning of  
737 life. It turns out that for myself that I'm not in great difficulty about this point. I should  
738 be. This will interest you. I had a roommate in college whom I liked a lot, and he went

739 off and served [in the military and in another profession.] We drifted apart, I haven't seen  
740 him for a long time, but I did sort of hear from him and also other friends... that maybe  
741 we should get in touch and each of us could share what we thought the meaning of life  
742 was. And I just didn't answer the letter. And I probably wouldn't answer it again. But it  
743 seemed to me that the exchange showed that, for my friend, and some of his other friends  
744 spent a lot of time thinking about the meaning of life, like the folks do in William James'  
745 "Variety of Religious Experience." And one of the things about that book that rings true  
746 is that there is a whole lot of different kinds of religious experience. There are varieties.  
747 And one of those varieties is not to be so bothered by it.

748

749 M: Yeah.

750

751 R: Well [chuckle] maybe I've said all I can say usefully.

752

753 M: [laughter] Yeah. Would you at least agree that it's possible to not be bothered by it,  
754 but to still be curious about it and to have dialogues about it?

755

756 R: Yeah.

757

758 M: All right. Well, that's kind of what we've done.

759

760 R: [laughter] OK, that's not bad.

761

762 M: I probably could ask questions on and on and on, but basically I think I understand  
763 what you're getting at, and I really appreciate your contributing to this, and I guess we  
764 can end it there.

765

766 R: OK. I look forward to receiving, if you write something up, send it to me.

767

768 M: I plan to. With regard to this particular interview, I am not sure how I'm going to  
769 obscure some of this personal stuff, but I will find a way to do it, so...

770

771 R: OK.

772

773 M: OK.

774

775 R: Have good luck with it.

776

777 M: Thank you very much.

778

779 R: Happy New Year.

780

781 M: Bye-bye.

782

**Appendix Q:**

**Interview via Email — Respondent: 27BA**

**Subject: Re: Religious attitudes questionnaire follow-up**

**Dear Mr. Pappas,**

**I'll do my best to write reasonably clear, brief answers to your questions. But let me say at the onset, the formulation of some of them seem deeply influenced by a religious perspective, which, of course, I do not share. Also, each one is the sort of question that many people have spent a lifetime studying and writing long tomes. So my answers are bound to be very superficial.**

**27BA**

**At 06:35 PM 12/21/2006, you wrote:**

**Dear Dr. 27BA:**

Thank you for completing the religious attitudes questionnaire and for expressing a willingness to be interviewed via email. Please know that if you reply to this or any follow-up messages that your replies will be kept completely confidential. Furthermore, any personally identifying information you might provide will be edited sufficiently to obscure your identity.

I am not looking for any particular answers, and I understand if you choose to skip any questions. Your candid responses—either succinct or verbose—and continued participation are greatly appreciated.

First, please expound on a few of your questionnaire answers. You indicated that you are open-minded about the mysteries of life. What do you imagine those mysteries might be like?

**One mystery is very old and, indeed, and still far from resolved: the mind/body problem. How do the electro/chemical activities of billions of neurons seem to give rise to our sense of consciousness? There are now many cognitive psychologists who are convinced that developments in brain imaging will ultimately lead to its resolution, but I am not yet convinced. It's a very long leap from where we are now. It may take centuries.**

826 A closely related question is what other animals also have something like our  
827 consciousness? And how can we know that using scientifically sound methods? This  
828 problem is very subtle. For example, some observers think that dolphins  
829 communicate among themselves in a more complex way than merely signals for  
830 danger, food, sex, which are fairly common to a lot of species. Yet we have not, to  
831 my knowledge, managed to crack the code of their messages. Yet we somehow think  
832 that if there is extra-terrestrial life we know how to detect meaningful signals.

833

834 But beyond life itself, there is the vast mystery of universe itself — its nature,  
835 dimensionality, whether there really are elementary particles, the nature and  
836 relations among the forces, the ultimate laws and their degrees of invariance over  
837 time, what led to the big bang?, and of course many biological issues beyond the  
838 mind/body problem, etc, etc. Basically, everything that we know of as science and  
839 where it is going. It has been and is a major social adventure, for good or ill.  
840 Increasingly, I fear for ill. When and how will the human species go extinct?

841

842 And, of course, there are exceeding complex issues about the nature of social  
843 structures, their evolution, their dangers — topics of the whole of social science —  
844 and the question of whether gaining such knowledge we permit us to learn how not  
845 to try forcibly try [sic] to impose our views on others. None of us should be so  
846 convinced that we know the truth and insist that others agree. Yet quite regularly  
847 we violate that simple moral claim.

848

849

850 You indicated that you believe no part of you exists independently of your physical  
851 person. Can you accurately and precisely identify the boundary between you and your  
852 environment?

853

854

855 **My environment, which includes both animate and inanimate aspects, impinges**  
856 **upon my sense organs, and outputs from my body impinge on my environment.**  
857 **Sometimes the intervening activity between the input and output is conscious, but**  
858 **most of the time a great deal of it is not conscious (e.g., walking itself as distinct**  
859 **from the goal of getting somewhere). I'm not really sure what you mean by to**  
860 **"identify the boundary between you and your environment".**

861

862 **I'm sure that philosophers would see my views as highly simplistic. But these are the**  
863 **thoughts that immediately spring to mind.**

864

865 You agreed "somewhat" that you had found a way to come to terms with your existence,  
866 or lack thereof. Can you describe how you've done that?

867

868

869 **I was brought up by parents who were semi-active in a [protestant] church and who**

870 had me there every Sunday for the service and for the appropriate level Sunday  
871 School. By the time I was an adolescent I was quietly (I am fairly shy) growing quite  
872 skeptical of the various things that they were attempting to drill into me, but I did  
873 not rebel until I went to college at age 17 and delved quite heavily on my own into a  
874 good deal of secular philosophy. These ideas seemed more plausible to me, namely  
875 that we know about ourselves, the world, and the universe by study and  
876 observation, not by religious fiat. And with this perspective, I simply accepted my  
877 existence and that of others as having occurred and that one day it will cease; that I  
878 will no longer be. I simply do not see any reason to think that my "soul" or  
879 consciousness will outlast me or that it existed before I was conceived. Clearly, that  
880 is an hypothesis that I no more know how to prove than a more religious person  
881 does his or her hypotheses. Nonetheless, it underlies my approach to the world.

882

883 Below are several related questions:

884

885 How have you found meaning?

886

887

888 Through deep personal relationships and via an active intellectual life based on  
889 study, theory generation, and empirical studies.

890

891 What is most important, or special, to you?



892

893

894   **To be honorable to the extent that I am wise enough to be, to be moral, to be of some**  
895   **service to others such as my university, and to try to understand aspects of the**  
896   **world as filtered through my mind. Of course one's life has many more mundane**  
897   **pleasures such as enjoying aspects of art — paintings, plays, music, some cinema —;**  
898   **gardening; over the years knowing several [household pets] and becoming aware of**  
899   **their huge individual differences; excellent food and wine; and sensual pleasures.**  
900   **And these too are special to me, even if my esthetic tastes are not as cultivated as**  
901   **some people's.**

902

903   **Why do you get out of bed in the morning?**

904

905

906   **Because I wake up, usually quite early, wanting to do various things that, of course,**  
907   **vary from day to day, year to year, and decade to decade. I look forward to what**  
908   **comes my way and what I can do to advance our understanding of a small aspect of**  
909   **this remarkable world in which we live.**

910

911   **How are your values determined?**

912

913

914 **I have no real idea. Presumably, they have been learned both via what I have**  
915 **experienced and what my understanding, which surely is very imperfect, of what**  
916 **others have experienced and feel. Some would attribute that mostly to parents and**  
917 **aspects of upbringing but what all the other factors are, I do not really know.**

918

919 Have you ever experienced a communion with the infinite, or universal consciousness, or  
920 some other transcendence, whether articulable or not?

921

922

923 **Either it goes on most of the time or I haven't experience such an event at all. I need**  
924 **more precise definitions.**

925

926

927 Do you believe there is ultimately more than one absolute? If so, can you describe them?

928

929

930 **I'm not at all sure what an "absolute" is. It sounds more like an adjective rather**  
931 **than a noun.**

932

933 Finally, what question do you think should have been asked here or on the initial  
934 questionnaire, that was not asked?

935

936

937 **I haven't a clue; it really depends up the goals of your study.**

938

939 Thank you for your patience in waiting for me to get back to you: I just yesterday

940 received the IRB approval to follow up with this email. If you have any questions for me,

941 I will reply as quickly as possible with my best answer.

942

943 Sincerely,

944

945 Matthew Pappas

946 Doctoral candidate

947 University of Texas at Austin

948

949

**Appendix R:**

**Interview — Respondent: 29BC**

949

950

951

952 M: There was a question on the questionnaire—I was using a Likert scale on this—that

953 said, "Although I do not believe in God, I am open-minded about the mysteries of life."

954 You did not answer that, and I was curious... was that because you didn't like the word

955 "mysteries" because it suggested something supernatural...

956

957 R: Yes, I think that's right. I wasn't sure what was meant by "mysteries."

958

959 M: That doesn't surprise me. May I ask you, since this was a questionnaire about

960 immortality and existence and so forth, what is most important or special to you? And, of

961 course, I want to remind you that the confidentiality continues from the questionnaire on

962 through this interview, and of course it's anonymous on your part, and so on.

963

964 R: I wasn't sure what the question meant... "important"... Do you mean like, uh... value in

965 life?

966

967 M: I suppose so. What makes you want to get out of bed in the morning?

968

969 R: Social justice.

970

971 M: Social justice.... There was also a question on the questionnaire that stated, "I desire  
972 personal immortality," and you checked, "not at all." That wasn't an uncommon  
973 response. Uh, do you desire to be alive a year from now?

974

975 R: Sure.

976

977 M: Yeah. But one question I have is, if you desire being alive a year from now—and  
978 that's not unusual for us—but you think immortality is not something you desire, where  
979 in between those two is a target?

980

981 R: OK, immortality, I'd like immortality, sure.

982

983 M: OK. That's a tough one. I'm not sure what you'd do after a few billion years, but.... I  
984 guess there's only one more question that I'd appreciate you answering, unless there's  
985 something else you want to say...

986

987 R: Sure.

988

989 M: There are some people in psychology who have argued about how to define the  
990 individual human being. Do you feel that you have gotten to an answer? What is  
991 essentially the individual? And do you feel like you've found an answer to that or... I  
992 know there are some people who go to another extreme and say, No, we don't exist—that

993     this is just a convention to say that the individual exists and as a practical matter we use  
994     that. Where do you see yourself on that?  
995  
996     R: I don't think I have a view on it.  
997  
998     M: OK. Like I said, I really appreciate your time.  
999  
1000    R: Sure.  
1001  
1002    M: If there's a question you might have, I'd be glad to try to answer it any way I can.  
1003    And otherwise, that's it.  
1004  
1005    R: No, that's OK.  
1006  
1007    M: Thank you so much.  
1008  
1009    R: OK.  
1010  
1011    M: Bye-bye.  
1012

1012

**Appendix S:**

1013

**Interview — Respondent: 19AS**

1014

1015

1016 M: The questionnaire was with regard to the respondents' belief in God and immortality

1017 and related...

1018

1019 R: I'm sorry, I don't have any beliefs that way, so you can just count me out of it.

1020

1021 M: Oh.

1022

1023 R: Sorry.

1024

1025 M: That's ok.

1026

**Appendix T:**

**Interview — Respondent: 15AO**

1026

1027

1028

1029

1030 M: There was one statement in the questionnaire in which you, like some other people,  
1031 marked the statement that "I desire immortality intensely." As I said, you weren't the  
1032 only one.

1033

1034 R: Yes. It would be nice, right?

1035

1036 M: Yes. There was also another statement that you marked that you agreed with that  
1037 said, "I have found a way to come to terms with my existence, or lack thereof." And, like  
1038 I said, the confidentiality continues, and I know these are personal questions. And I'm  
1039 wondering how, or if you can articulate how you have come to terms with your existence.

1040

1041 R: I don't even know what I meant by saying that since I am unreconciled to death.

1042

1043 M: Yeah, unreconciled. OK... well, if you are unreconciled with death, how about this....  
1044 I know that there are a lot of psychologists, or at least some, who have gained some  
1045 notoriety, who say that not only do we cease to exist, but we don't even exist in the first  
1046 place. And this existence, having an identity, is just a convention. It's a practical matter,  
1047 we have to have this. Would you go that far or...?



1048

1049 R: No, I believe that human beings have an identity, yes, in some informal sense. If you  
1050 next ask me what it means to have an identity, I will be unable to say anything  
1051 intelligible.

1052

1053 M: How about this... Do you think of yourself as basically rational or basically  
1054 irrational?

1055

1056 R: Well, most of human behavior is irrational, but there's a rational component.

1057

1058 M: So there's really kind of a balance, I guess.

1059

1060 R: Well, it's not a balance. There's nothing rational about, let us say, how you manage to  
1061 breathe or send blood to your cells. Most parts of the brain have no contact with what we  
1062 think of as the conscious mind. And all those parts are necessarily nonrational. And, of  
1063 course, there are components of emotional life that are irrational as well.

1064

1065 M: If we're not already off the deep end, I'm going to ask you a question that maybe will  
1066 sound silly and maybe it will not, but...have you ever experienced any kind of  
1067 communion with the infinite or universal consciousness or something transcendental or  
1068 something like that?"

1069

1070 R: No, I'm really the extreme of non-spirituality. I wouldn't have been against having  
1071 such an experience, but I never had one.

1072

1073 M: Well, that gets back to—and we can wrap this up with this—there was one statement  
1074 in the questionnaire and you were asked whether you agreed or disagreed with it... The  
1075 statement was, "Although I do not believe in God, I am open-minded about the mysteries  
1076 of life." And then you said that you strongly disagreed. I'm wondering is that because  
1077 the word "mysteries" suggested something supernatural or something like that, and that  
1078 you disagreed with that maybe?

1079

1080 R: Right. Of course, I believe that a great deal is knowable eventually by science. But  
1081 the mysteries of life as a spiritual plane, I don't respond to. Alas! Alas!

1082

1083 M: I don't know how to follow up with any other questions. It's a conundrum, I guess. If  
1084 you had anything to add, I would be glad to hear it. I would be more than glad.

1085

1086 R: Well, go on with your good work. It's been a pleasure talking to you.

1087

1088 M: Thank you. You, too.

1089

1090 R: If something interesting comes out that you want to share with the world, I would be  
1091 interested to see it.

1092

1093 M: Thank you. Hopefully maybe something interesting will come out of this and I will

1094 let you know.

1095

1096 R: Okie-doke.

1097

1098 M: I appreciate it so much.

1099

1100 R: Bye-bye.

1101

1102 M: Bye-bye

## References

- A fair share: The concept of sharing primary data is generating unnecessary angst in the psychology community. (2006). *Nature*, 444, 653-654.
- Alexander, D.R. (1999). Can science explain everything? Scientific naturalism and the death of science. In the *Cambridge Papers*, 8, . Cambridge, UK: Christians in Science. Retrieved December 20, 2005, from [http://www.cis.org.uk/resources/articles/article\\_archive/naturalism.htm](http://www.cis.org.uk/resources/articles/article_archive/naturalism.htm)
- Alreck, P. L. & Settle, R. B. (1985). *The survey research handbook*. Homewood, IL: Richard D. Irwin, Inc.
- Allport, G.W. & Ross, J.M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5, 432-443.
- American Men and Women of Science* (19<sup>th</sup> Ed.) (1995). New Providence, NJ: Bowker.
- American Psychological Association. (1982). *Ethical principles in the conduct of research with human participants*. Washington, DC: Author.
- American Psychological Association. (1992). Ethical principles of psychologists and code of conduct. *American Psychologist*, 47, 1597-1611.
- American Psychological Association (2001). *Publication Manual of the American Psychological Association* (5<sup>th</sup> Ed.). Washington, DC: Author.
- Appleyard, J.A. (March 17, 2006). Letter to the editor. *Chronicle of Higher Education*, B17.
- Aron, L. (2004). God's influence on my psychoanalytic vision and values. *Psychoanalytic Psychology*, 21, 442-451.
- Asch, S. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs*, 70, (Whole No. 416).
- Atwood, G.E. (2002). Only a God can save us. *Psychoanalytic psychology*, 19, 324-327.
- Baker, M.R. (1997). The one true faith. *Nature*, 387, 12.
- Becker, E. (1973). *The denial of death*. New York: The Free Press.

- Begley, S. (January 27, 2006). Despite appearances, science doesn't deny the existence of God. *Wall Street Journal*, p.B1.
- Benjamin, L.T., DeLeon, P.H., Freedheim, D.K., & Vandenbos, G.R. (2003). Psychology as a profession. In B.K. Freedheim (Ed.), *Handbook of Psychology: History of Psychology* (Vol. 1, pp. 27-45). Hoboken, NJ: John Wiley & Sons, Inc.
- Bergin, A.E. & Jensen, J.P. (1990). Religiosity of psychotherapists: a national survey. *Psychotherapy*, 27, 3-7.
- Bilgrave, D.P. & Deluty, R.H. (1998). Religious beliefs and therapeutic orientations of clinical and counseling psychologists. *Journal for the Scientific Study of Religion*, 37 (2), 329-349.
- Blackmore, S. (2006). *Conversations on consciousness*. Oxford University Press.
- Bleek, W. (1987). Lying informants: A fieldwork experience from Ghana. *Population and Development Review*, 13 (2), 314-322.
- Bloom, P. (2007). Religion is natural. *Developmental Science*, 10 (1), 147-151.
- Bloom, P. (October, 2005). Worse than creationism. *Observer*, 18 (10), p.5, published by the American Psychological Society.
- Bloustein, E.J. (1972). *The university and the counterculture*. New Brunswick, NJ: Rutgers University Press.
- Bok, S. (1978). *Lying: Moral choice in public and private life*. New York: Pantheon Books.
- Brooke, J.H. (1991). *Science and religion: Some historical perspectives*. Cambridge: Cambridge University Press.
- Brown, C.M. (2003). The conflict between religion and science in light of the patterns of religious belief among scientists. *Zygon*, 38, 3, 603-.
- Campbell, C.J. (1998). *Research in psychology* (2<sup>nd</sup> Ed.). New York: John Wiley & Sons.
- Carmines, E. G., & Zeller, R.A. (1979). *Reliability and validity assessment*. Newbury Park: SAGE Publications.

- Cattell, J.M. (Ed.) (1910). *American Men of Science: A Biographical Directory* (2<sup>nd</sup> Ed.). New York: Science Press.
- Chang, K. (2004, March 23). Denied Nobel for MRI, he wins another prize. *New York Times*.
- Chaszar, M. (March 17, 2006). Letter to the editor. *Chronicle of Higher Education*, B17.
- Christensen, C. J. (2003). *Questions, questions, and more questions*. Retrieved April 10, 2005, from <http://www.csun.edu/~vcecn006/ques.html>
- Cialdini, R. B. (2001). *Influence: Science and practice*. (4<sup>th</sup> ed.). Needham Heights, MA: Allyn & Bacon.
- Cleland, C.E. (2001). Historical science, experimental science, and the scientific method. *Geology*, 29, 987-990.
- Cleland, C.E. (2002). Reply. *Geology*, 30, 951-952.
- Cohen, A.B., Hall, D.E., Koenig, H.G., & Meador, K.G. (2005). Social versus individual motivation: Implications for normative definitions of religious orientation. *Personality and Social Psychology Review*, 9, 48-61.
- Cohen, J. (1990). Things I have learned (so far). *American Psychologist*, 45, 1304-1312.
- Cohen, J. (1994). The earth is round ( $p < .05$ ). *American Psychologist*, 49, 997-1003.
- Cook, T. D. & Campbell, D. T. (1979). *Quasi-experimental design and analysis issues for field settings*. Chicago: Rand-McNally.
- Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-333.
- Curlin, F.A., Lantos, J.D., Roach, C.J., Sellergren, S.A., & Chin, M.H. (2005). Religious characteristics of U.S. physicians. *Journal of General Internal Medicine*, 7, 629-634.
- Dawkins, R. (1976). *The selfish gene*. New York: Oxford University Press.
- Dean, J.P. & Whyte, W.F. (1958). How do you know if the informant is telling the truth? *Human Organization*, 17 (2), 34-38.

- Devereux, G. (1967). *From anxiety to method in the behavioral sciences*. The Hague: Mouton.
- Deville, G.J. & Ciorciari, J. (2007). Conclusions in science when theory and data collide. *Psychological Science*, 18, 220-221.
- De Young, Q.R. (1976). An unknown God made known: The religion of psychology. *Journal of Psychology & Theology*, 4, 87-93.
- Does neuroscience threaten human values? (1998). *Nature Neuroscience*, 1, 535-536.
- Dossey, L. (1997). The return of prayer. *Alternative Therapies in Health and Medicine*, 3, 10-17 and 113-120.
- Dossey, L. (2000). The science blues. *Alternative Therapies in Health and Medicine*, 4, 12-17, 94-98.
- Dugger, R. (1974). *Our invaded universities*. New York: W.W. Norton.
- Easterbrook, G. (1997). Science and God: A warming trend? *Science*, 277, 890-893.
- Ellis, A. (1980). Psychotherapy and atheistic values: A response to A.E. Bergin's Psychotherapy and religious values. *Journal of Consulting and Clinical Psychology*, 48, 635-639.
- Ellis, A. (2000). Can rational emotive behavior therapy (REBT) be effectively used with people who have devout beliefs in God and religion? *Professional Psychology: Research and Practice*, 31, 29-33.
- European Commission (2005). Europeans, science and technology. *Eurobarometer*. Retrieved December 6, 2005, from [http://europa.eu.int/comm/public\\_opinion/archives/ebs/ebs\\_224\\_report\\_en.pdf](http://europa.eu.int/comm/public_opinion/archives/ebs/ebs_224_report_en.pdf)
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fink, A. (1995). *How to ask survey questions*. Thousand Oaks, CA: Sage.
- Formatting guide: manuscript preparation and submission* (2007) Retrieved May 20, 2007 from <http://www.nature.com/nature/authors/gta/index.html>
- Forrest, B. (2006). In S. Begley (January 27, 2006). Despite appearances, science doesn't deny the existence of God. *Wall Street Journal*, p.B1.

- Fowler, F.J. (1993). *Survey research methods* (2<sup>nd</sup> ed.). Newbury Park, CA: Sage.
- Fowler, F. J. (1995). *Improving survey questions: Design and evaluation*. Thousand Oaks: SAGE Publications.
- Fuchs, A.H. & Milar, K.S. (2003). Psychology as a science. In B.K. Freedheim (Ed.), *Handbook of Psychology: History of Psychology* (Vol. 1, pp. 1-26). Hoboken, NJ: John Wiley & Sons, Inc.
- Gallup, G. & Jones, T. (2000). *The next American spirituality: Finding God in the twenty-first century*. Colorado Springs, CO: Cook Communications.
- Geiderman, J.M. (2000). Faith and doubt. *Journal of the American Medical Association*, 283, 1661-1662.
- Giberson, K.W. & Yerxa, D.A. (2000) An interview with Edward J. Larson. *Reports of the National Center for Science Education*, 20, 56-63.
- Glenn, D. (2005a, August 15). Religious belief is found to be less lacking among social scientists. *Chronicle of Higher Education*.
- Glenn, D. (2005b, September 2). Sociologists debate degrees, dropouts, and faculty beliefs. *Chronicle of Higher Education*.
- Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday.
- Goode, E. (March 9, 2004). Defying psychiatric wisdom, these skeptics say, "Prove it." *New York Times*. Retrieved from <http://query.nytimes.com/gst/fullpage.html?sec=health&res=9E02E4D7163EF93AA35750C0A9629C8B63>
- Goodwin, C. J. (1998). *Research in psychology: methods and design* (2<sup>nd</sup> ed.). New York: John Wiley & Sons.
- Gould, S.J. (1997). Nonoverlapping magisteria. *Natural History*, 106, 16-26.
- Gudjonsson, G. H. (2003). *The psychology of interrogations and confessions: A handbook*. Chichester, England: John Wiley & Sons.
- Gudjonsson, G.H., Sigurdsson, J.F., Bragason, O.O., Einarsson, E. & Valdimarsdottir, E.B. (2004). Confessions and denials and the relationship with personality. *Legal and Criminological Psychology*, 9, 121-133.



- Hagen, R. L. (1997). In praise of the null hypothesis statistical test. *American Psychologist*, 52, 15-24.
- Hall, D.E. & Curlin, F. (2004). Can physicians' care be neutral regarding religion? *Academic Medicine*, 79, 677-679.
- Hawkins, B.A. (1999). More haste, less science? *Nature*, 400, 498.
- Highfield, R. (April 3, 1997). *The Daily Telegraph*, p. 4.
- Hill, P. J. (2006). My religious college, my secular profession. *Academe: Bulletin of the American Association of University Professors*, 1, 19-20.
- Hofstadter, D.R. (1998). Popular culture and the threat to rational inquiry. *Science*, 281, 512.
- Horgan, J. (1996). Doubts about doubts about science. *The Sciences*, 40, 40-45.
- Horgan, J. (April 7, 2006). The Templeton Foundation: A skeptic's take. *The Chronicle of Higher Education*, B18-B19.
- Horgan, J. (2003). *Rational mysticism: Dispatches from the border between science and spirituality*. New York: Houghton Mifflin Company.
- Iannaccone, L. (1998). Introduction to the economics of religion. *Journal of Economic Literature*, 1468-95.
- James, W. (1958). *The varieties of religious experience*. New York: Penguin Books.
- Jensen, J.P. (1986). *Mental health values of professional therapists: A national interdisciplinary survey*. (Doctoral dissertation, Brigham Young University). Dissertation Abstracts International, 47, 1725 B.
- Kagan, J. & Snidman, N. (October, 2005). Temperament and a religious perspective. *Observer*, 18 (10), p.19, published by the American Psychological Society.
- Kantor, J.R. (1917a). Book reviews: The belief in God and immortality. *International Journal of Ethics*, 27, 396-397.
- Kantor, J.R. (1917b). Discussion: Statistics of belief in God and immortality. *International Journal of Ethics*, 28, 113-114.

- Keshavarz, F. (2006). Making the silence visible. *Academe: Bulletin of the American Association of University Professors*, 1, 28-29.
- Kestenbaum, D. (2005, March 14). Donald Knuth, founding artist of computer science [Interview with Donald Knuth, author of *The Art of Computer Programming* books]. *Morning Edition*. National Public Radio. Retrieved on December 20, 2005, from <http://www.npr.org/templates/story/story.php?storyId=4532247>
- Kilty, K.T. (2002). Comment. *Geology*, 30, 951.
- Kimble, G.A. (1984). Psychology's two cultures. *American Psychologist*, 39, 833-839.
- Klebba, C.E. (2002). *Directory of American Scholars* (10<sup>th</sup> ed.). Detroit, MI: Gale Group.
- Kramer, R.C. & Shaffer, J.D. (1954). The case for the mail survey. *Journal of Farm Economics*, 36, 575-589.
- Krebs, P.M. (2006). Tale of two Wheatons and more. *Academe: The Bulletin of the American Association of University Professors*, 92 (1), 2.
- Kübler-Ross, E. (1969). *On death and dying*. New York: Macmillan.
- Kuhn, T. (1970). *The structure of scientific revolutions* (2nd. ed.). Chicago: University of Chicago Press.
- Kuran, T (1995). *The social consequences of preference falsification*. Cambridge, MA: Harvard University Press.
- Ladd, E., Lipset, S.M., & Trow, M. (1969). *Carnegie Commission national survey of higher education: Faculty study subsample, 1969*. Carnegie Commission on Higher Education.
- Landuyt, N.G.. (1999). Employee perceptions of organizational quality and learned helplessness in higher education. *Dissertation Abstracts International*, 60 (09). UMI Publication No. AAT 9947290)
- Larson, E.J. (1997). *Summer for the gods: The Scopes trial and America's continuing debate over science and religion*. Cambridge, MA: Harvard University Press.
- Larson, E.J. & Witham, L. (1997). Scientists are still keeping the faith. *Nature*, 386, 435-436.

- Larson, E.J. & Witham, L. (1998). Leading scientists still reject God. *Nature*, 394, 313.
- Larson, E.J. & Witham, L. (1999, September). Scientists and religion in America. *Scientific American*, 281, 88-94.
- Larson, E.J. (2004). *Evolution: The remarkable history of a scientific theory*. New York: The Modern Library.
- Latane, B. (1981). The psychology of social impact. *American Psychologist*, 36, 343-356.
- Lenski, G. E. (1963). *The religious factor* (Rev. ed.). Garden City, NY: Doubleday.
- Leshner, A.I. (October, 2005). Science and religion should not be adversaries. *Observer*, 18 (10), p.19, published by the American Psychological Society.
- Leuba, J.H. (1912). *A psychological study of religion: Its origin, function, and future*. New York: The Macmillan Company.
- Leuba, J.H. (1913). Can science speak the decisive word in theology? *Journal of Philosophy, Psychology, and Scientific Methods*, 10, 411-414.
- Leuba, J.H. (1915). William James and immortality. *Journal of Philosophy, Psychology, and Scientific Methods*, 12, 409-416.
- Leuba, J.H. (1916). *The belief in god and immortality: A psychological, anthropological and statistical study*. Boston: Sherman, French & Co.
- Leuba, J.H. (1917a). The belief in God and immortality. *Psychological Bulletin*, 14 (11), 405-407.
- Leuba, J.H. (1917b). Discussion: Statistics of belief in God and immortality. *International Journal of Ethics*, 28, 109-113.
- Leuba, J.H. (1921a). *The belief in god and immortality: A psychological, anthropological and statistical study* (2<sup>nd</sup> Ed.). Chicago: Open Court Publishing Company.
- Leuba, J.H. (1921b). *The psychological origin and the nature of religion*. London: Constable & Company.
- Leuba, J.H. (1925). *The psychology of religious mysticism*. New York: Harcourt, Brace & Company.

- Leuba, J.H. (1933). *God or man: A study of the value of god to man*. New York: Henry Holt and Company.
- Leuba, J.H. (1934). Religious beliefs of American scientists. *Harper's Magazine*, 169, 291-300.
- Leuba, J.H. (1950). *The reformation of the churches*. Boston: Beacon.
- Lewis, R.J. (1999). Reliability and validity: Meaning and measurement. Presented at the 1999 Annual Meeting of the Society for Academic Emergency Medicine (SAEM) in Boston, MA.
- Lilienfeld, S.O. (2004). Defining psychology: Is it worth the trouble? *Journal of clinical psychology*, 60, 1249-1253.
- Lind, D.D. (1997). Perceptions of community college faculty concerning ideal, actual, and expected levels of teacher-student interaction outside the classroom. *Dissertation Abstracts International*, 58 (07). UMI Publication No. AAT 9802944)
- Losh, S.C. (1996). Quoted in Raloff, J. (1996). When science and beliefs collide. *Science News*, 149, 360-361.
- Maier, B.N. (2004). The role of James McCosh in God's exile from psychology. *History of Psychology*, 7, 323-339.
- Mangeloja, E. (2003). Implications of the economics of religion to the empirical economic research. Economics Working Paper Archive. Retrieved on February 11, 2006 from [http://www.cc.jyu.fi/~eman/Relig\\_to\\_Eco.pdf](http://www.cc.jyu.fi/~eman/Relig_to_Eco.pdf)
- Mangione, T.W. (1998). *Handbook of applied social research methods*. Thousand Oaks, CA: Sage.
- Marsden, G.M. (1994). *The soul of the American university: From Protestant establishment of established nonbelief*. New York: Oxford University Press.
- Martin, P. (March 17, 2006). Letter to the editor. *Chronicle of Higher Education*, B17.
- Mathen, J. (2004). *On the inherent incompleteness of scientific theories*. Retrieved on December 20, 2005, from <http://philsci-archive.pitt.edu/archive/00002116/01/UC58bf.pdf>
- Mayer, R.W. (1959). Religious attitudes of scientists. (Doctoral dissertation, Ohio State University, 1959). *Dissertation Abstracts International*, 20, 2412-2413.

- McBride, K.E. (1947). James Henry Leuba: 1867-1946. *American Journal of Psychology*, 60, 645-646.
- McHugh, P.R. (1994). Psychotherapy awry. *American Scholar*, 63, 17-30.
- Meehl, P. E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. *Journal of Consulting and Clinical Psychology*, 46, 806-834.
- Milgram, S. (1963). Behavioral study of obedience. *Journal of Abnormal and Social Psychology*, 67, 371-378.
- Milgram, S. (1964). Issues in the study of obedience: A reply to Baumrind. *American Psychologist*, 19, 848-852.
- Milgram, S. (1974). *Obedience to authority: An experimental view*. New York: Harper & Row.
- Milloy, S & Gough, M. (1998). *Silencing science*. Washington, DC: Cato Institute.
- Myers, D.G. (October, 2005). Psychological science meets the world of faith. *Observer*, 18 (10), p.19, published by the American Psychological Society.
- National Science Board (1996). *Science and engineering indicators*. Washington: National Science Foundation.
- Neeleman, J. & King, M.B. (1993). Psychiatrists' religious attitudes in relation to their clinical practice: A survey of 231 psychiatrists. *Acta Psychiatrica Scandinavica*, 88, 420-424.
- Nieto, J.C. (1994). The biology of God or the psychology of God? A response to David Hay. *The International Journal for the Psychology of Religion*, 4, 29-33.
- NORC (1998). *General Social Survey*. <http://www.icpsr.umich.edu/GSS>
- Nunez, N., Poole, D.A., & Memon, A. (2003). Psychology's two cultures revisited. *The Scientific Review of Mental Health Practice*, 2, 8-19.
- Ogburn, W.F. (1917). Book reviews: Methods and principles. *American Anthropologist*, 19, 416-420.
- Olszewski, B. (2006). Critical intellectual inquiry at Catholic colleges. *Academe: Bulletin of the American Association of University Professors*, 1, 30-32.

- Patten, M. L. (1998). *Questionnaire research: A practical guide*. Los Angeles: Pryczak.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2<sup>nd</sup> Ed.). Newbury Park: SAGE Publications.
- Pickren, W. & Fowler, R. (2003). Professional organizations. In B.K. Freedheim (Ed.), *Handbook of Psychology: History of Psychology* (Vol. 1, pp. 530-554). Hoboken, NJ: John Wiley & Sons, Inc.
- Pigliucci, M. (1998). A case against God. *Skeptic*, 6, 66-74.
- Platt, J.R. (October 16, 1964). Strong inference. *Science*, 146, 347-353.
- Popper, K. (1953). Science: Conjectures and refutations. In K. Popper (1963), *Conjectures and Refutations*. London: Routledge & Kegan Paul.
- Proceedings of the National Academy of Sciences of the United States of America* (1957) Vol. 43, 679-680. Washington, DC: National Academy of Sciences.
- Proctor, J.D. (May 15, 2003). In \_\_\_\_ we trust: Science, religion, and authority. *Templeton Research Lectures on the Constructive Engagement of Science and Religion*. University of California, Santa Barbara.
- Putman, T.E.M. (2001). Tribal college and university accreditation: A comparative study. (Doctoral dissertation. University of Texas at Austin). *Dissertation Abstracts International*, 727942481.
- Raloff, J. (June 8, 1996). When science and beliefs collide: A large and growing share of the population rejects aspects of science. *Science News*, 149, 360-362.
- Report of the annual meeting (1915). *Proceedings of the National Academy of Sciences*, 1, 322-330.
- Richards, R. (2007, March-April). Reason and reverence. *American Scientist*, 95 (2). Retrieved May 9, 2007, from [http://www.americanscientist.org/template/BookReviewTypeDetail/assetid/54754;jsessionid=baa\\_9m7pDhiQdc](http://www.americanscientist.org/template/BookReviewTypeDetail/assetid/54754;jsessionid=baa_9m7pDhiQdc)
- Rosenberg, M. J. (1969). The conditions and consequences of evaluation apprehension. In R. Rosenthal & R. L. Rosnow (Eds.), *Artifact in behavioral research*. New York: Academic Press.

- Rosenthal, R. (1966). *Experimenter effects in behavioral research*. New York: Appleton-Century-Crofts.
- Rosenthal, R. & Fode, K. L. (1963a). Three experiments in experimenter bias. *Psychological Reports*, 12, 491-511.
- Rosenthal, R. & Fode, K. L. (1963b). The effect of experimenter bias on the performance of the albino rat. *Behavioral Science*, 8, 183-189.
- Rosenthal, R. & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis* (2<sup>nd</sup> ed.). New York: McGraw-Hill.
- Rosnow, R. L., Goodstadt, B. E., Suls, J. M., & Gitter, A. G. (1973). More on the social psychology of the experiment: When compliance turns to self-defense. *Journal of Personality and Social Psychology*, 27, 337-343.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. *Advances in Experimental Social Psychology*, 10, 174-221.
- Ruse, M. (March 16, 2004). The Nobel Prize in Medicine—Was there a religious factor in this year's (non) selection? *Metanexus Online Journal*.
- Sapsford, R. (1999). *Survey research*. London: SAGE Publications.
- Schuman, H. & Presser, S. (1996). *Questions and answers in attitude surveys: Experiments on question form, wording, and content*. Thousand Oaks, CA: Sage.
- Scott, E. C. (1998). Do scientists really reject God? *Reports of the National Center for Science Education*, 18 (2), 24-25.
- Scott, W.R. (2002). *Organizations: Rational, natural, and open systems* (5<sup>th</sup> Ed.). Prentice Hall.
- Shepard, J. (2001). *Integrating psychology and Christianity*. Retrieved on February 11, 2006 from <http://www.northforest.org/SocialCulturalTopics/psychology.html>
- Simonton, D.K. (2004). Psychology's status as a scientific discipline: Its empirical placement within an implicit hierarchy of the sciences. *Review of General Psychology*, 8, 59-67.
- Sloan, R.P. (2006, November 3). The critical distinction between science and religion. *Chronicle of Higher Education*.
- Smith, R. (1991). Where is the wisdom. *BMJ*, 303, 798-799.

- Snow, C.P. (1959). *The two cultures and the scientific revolution*. New York: Cambridge University Press.
- Sokol, S. (October, 2005). It didn't bother Descartes. *Observer*, 18 (10), p.19, published by the American Psychological Society.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (1991). A terror management theory of social behavior: The psychological functions of self esteem and cultural worldviews. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 24, pp. 91-159). San Diego: Academic Press.
- Spiegel, A. (January 3, 2005). The dictionary of disorder. *The New Yorker*, p. ?
- Spirituality high among university scientists*. (2005, September 15). Retrieved on December 20, 2005, from <http://www.explore.rice.edu/explore/NewsBot.asp?MODE=VIEW&ID=7680&SnID=1010025625>
- Stark, R. (1963). On the incompatibility of religion and science: A survey of American graduate students. *Journal for the Scientific Study of Religion*, 3, 3-20.
- Stark, R., Iannaccone, L., & Finke, R. (1996). Religion, science, and rationality. *American economic review: Papers and proceedings*, 433-437.
- Stark, R., Iannaccone, L., & Finke, R. (1998). Rationality and the "religious mind." *Economic Inquiry*, 36, 373-390.
- Stocker, S. (October, 2005). Faculty experiences at religious institutions. *Observer*, 18 (10), p.23, published by the American Psychological Society.
- Tart, C.T. (1999). The archives of scientists' transcendent experiences (TASTE). *Human Nature*, 10, 53-54.
- Templeton, J.M. (Ed.) (1994). *Evidence of purpose: Scientists discover the creator*. New York: Continuum.
- Tolman, E. C., Tryon, R. C., & Jeffries, L. A. (1929). A self-recording maze with an automatic delivery table. *University of California Publications in Psychology*, 4, 99-112.
- Toops, H.A. (1926). The returns from follow-up letters to questionnaires. *Journal of Applied Psychology*, 10, 92-101.



- Townsend, M., Kladder, V., Ayele, H., & Mulligan, T. (2002). Systematic review of clinical trials examining the effects of religion on health. *Southern Medical Journal*, 95 (12), 1429-1434.
- Vande Kemp, H. (1986). Dangers of psychologism: The place of God in psychology. *Journal of Psychology & Theology*, 14, 97-109.
- Van Leeuwen, M.S. (1998). Psychology's "two cultures": A Christian analysis. *Christian Scholar's Review*. Retrieved February 11, 2006 from [http://www.cccu.org/resourcecenter/rc\\_detail.asp?resID=988](http://www.cccu.org/resourcecenter/rc_detail.asp?resID=988)
- Visher, S.S. (1947). Scientists, starred, 1903-1943. In *"American Men of Science": A Study of Collegiate and Doctoral Training, Birthplace, Distribution, Backgrounds and Developmental Influences*. Baltimore, MD: Johns Hopkins Press.
- Wagner, K. (2006). Faith statements do restrict academic freedom. *Academe: Bulletin of the American Association of University Professors*, 1, 21-22.
- Walach, H. & Reich, K.H. (2005). Reconnecting science and spirituality: Toward overcoming a taboo. *Zygon*, 40, 423-441.
- Ward, K. (1999). Why God must exist. *Science & Christian Belief*, 11, 5-13.
- Wentland, E. J. & Smith, K. W. (1993). *Survey responses: An evaluation of their validity*. San Diego, CA: Academic Press.
- Wertheimer, M. & Wertheimer, M.L. (1996). Can the gap between psychology's two cultures be bridged? *Psychological Inquiry*, 6, 131-134.
- Wheeler, D.L. (1997, April 11). Scientists found as likely to be atheists now as in 1916. *Chronicle of Higher Education*.
- Wicherts, J.M. (2006). The poor availability of psychological research data for reanalysis. *American Psychologist*, 61, 726-728.
- Wilson, E.O. (1998). *Consilience: The unity of knowledge*. New York: Alfred A Knopf.
- Witham, L. (1997, April 11). Many scientists see God's hand in evolution. *Washington Times*.
- Wood, S. E., Wood, E. G. & Boyd, D. (2005). *The world of psychology* (5<sup>th</sup> Ed.). Boston, MA: Pearson Education.

- Woodward, K.L. (1997, March 31). Is God listening? *Newsweek*.
- Word, C. O., Zann, M. P., & Cooper, J. (1974). The nonverbal mediation of self-fulfilling prophecies in interracial interaction. *Journal of Experimental Social Psychology*, 10, 109-120.
- Wright, W.K. (1917a). Special reviews: The belief in God and immortality. *Psychological Bulletin*, 14 (11), 401-404.
- Wright, W.K. (1917b). Rejoinder to Professor Leuba's answer to Wright's criticism of the book. *Psychological Bulletin*, 14 (11), 407-408.
- Wuthnow, R. (1985). Science and the sacred. In P.E. Hammond (Ed.), *The Sacred in the Secular Age* (pp. 187-203). Berkeley: University of California Press.
- Zilboorg, G. (1943). Fear of death. *Psychoanalytic Quarterly*, 12, 465-475.

## VITA

On the afternoon of July 15, 1969, Matthew William Pappas was plucked out of his mother's womb only about a hundred yards away from the University of Texas, one of his future alma maters. His parents, William Theodore Pappas and Charlotte Elizabeth Pappas, had previously had three other children. Apparently satisfied that they had finally gotten the child they wanted in Matthew, they had no more children.

Matthew's entire formal education occurred in the state of Texas. He graduated from Alamo Heights High School in San Antonio, Austin College in Sherman, and The University of Texas at Austin. At some point during the 1990s, Matthew was officially recognized as a member of the National Barbecue Association; he had eaten so much barbecue at so many different barbecue restaurants in central Texas that friends and associates would seek advice about barbecue from Matthew. His education about barbecue was informal and not nearly as costly as his figurative matriculation in the "school of hard knocks" that continues to this day.

Matthew has been teaching psychology at Austin Community College since 2004.

Permanent Address: [www.matthewpappas.com](http://www.matthewpappas.com)

This dissertation was typed by the author.